DAYTIME BROADCAST STATIONS

THE UNIVERSITY OF MICHIGAN
OCT 20 1960
MAIN READING ROOM

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE HOUSE OF REPRESENTATIVES

EIGHTY-SIXTH CONGRESS

SECOND SESSION

ON

H.R. 6676, H.R. 6868, H.R. 8286, H.R. 9627, H.R. 10275

BILLS TO AMEND THE COMMUNICATIONS ACT OF 1934, WITH RESPECT TO THE HOURS OF OPERATION OF CERTAIN BROADCASTING STATIONS

JUNE 13, 14, 15, AND 16, 1960

Printed for the use of the Committee on Interstate and Foreign Commerce

UNITED STATES
GOVERNMENT PRINTING OFFICE
61308 O WASHINGTON : 1960

COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE

OREN HARRIS, Arkansas, *Chairman*

JOHN BELL WILLIAMS, Mississippi
PETER F. MACK, JR., Illinois
KENNETH A. ROBERTS, Alabama
MORGAN M. MOULDER, Missouri
HARLEY O. STAGGERS, West Virginia
WALTER ROGERS, Texas
SAMUEL N. FRIEDEL, Maryland
JOHN J. FLYNT, JR., Georgia
TORBERT H. MACDONALD, Massachusetts
GEORGE M. RHODES, Pennsylvania
JOHN JARMAN, Oklahoma
LEO W. O'BRIEN, New York
JOHN E. MOSS, California
JOHN D. DINGELL, Michigan
JOE M. KILGORE, Texas
PAUL G. ROGERS, Florida
ROBERT W. HEMPHILL, South Carolina
DAN ROSTENKOWSKI, Illinois
LAWRENCE BROCK, Nebraska
JAMES C. HEALEY, New York

JOHN B. BENNETT, Michigan
WILLIAM L. SPRINGER, Illinois
PAUL F. SCHENCK, Ohio
STEVEN B. DEROUNIAN, New York
J. ARTHUR YOUNGER, California
WILLIAM H. AVERY, Kansas
HAROLD R. COLLIER, Illinois
MILTON W. GLENN, New Jersey
SAMUEL L. DEVINE, Ohio
ANCHER NELSEN, Minnesota
HASTINGS KEITH, Massachusetts
WILLARD S. CURTIN, Pennsylvania

W. E. WILLIAMSON, *Clerk*
KENNETH J. PAINTER, *Assistant Clerk*

Professional Staff

ANDREW STEVENSON
KURT BORCHARDT
SAM G. SPAL
MARTIN W. CUNNINGHAM

SUBCOMMITTEE ON COMMUNICATIONS AND POWER

OREN HARRIS, Arkansas, *Chairman*

WALTER ROGERS, Texas
JOHN J. FLYNT, JR., Georgia
JOHN E. MOSS, California
DAN ROSTENKOWSKI, Illinois

JOHN B. BENNETT, Michigan
J. ARTHUR YOUNGER, California
WILLIAM H. AVERY, Kansas

DEPOSITED BY THE
UNITED STATES OF AMERICA

CONTENTS

	Page
Text of H.R. 6676	1
Report of—	
Bureau of the Budget on H.R. 6676	3
Federal Communications Commission on H.R. 6676, H.R. 6868, and H.R. 8286	1
Statement of—	
Abernethy, Hon. Thomas G., a Representative in Congress from the State of Mississippi	9
Barr, James E., Assistant Chief, Broadcast Bureau, Federal Communications Commission	17
Biggar, George C., president-general manager, De Kalb Radio Studios, Inc. (WLBK), De Kalb, Ill	254
Carnahan, Hon. A. S. J., a Representative in Congress from the State of Missouri	13
Coad, Hon. Merwin, a Representative in Congress from the State of Iowa	273
Cottone, Benedict P., counsel, Daytime Broadcasters Association	170, 225
Craven, T. A. M., Commissioner, Federal Communications Commission	17
Cross, John S., Commissioner, Federal Communications Commission	17
Dillard, L. Everett, consulting engineer, Daytime Broadcasters Association	170, 214
Eagan, R. Russell, counsel, Clear Channel Broadcasting Service	289
Escola, Charles R., Assistant General Counsel, Federal Communications Commission	17
FitzGerald, John L., General Counsel, Federal Communications Commission	17
Ford, Frederick W., Chairman, Federal Communications Commission	17
Haley, Andrew G., counsel, Meredith Broadcasting Co	312
Hyde, Rosel H., Commissioner, Federal Communications Commission	17
Jones, Hon. Paul C., a Representative in Congress from the State of Missouri	276
Kear, Frank G., on behalf of Triangle Publications, Inc., and American Broadcasting-Paramount Theatres, Inc	228
Livesay, J. R., chairman, board of directors, Daytime Broadcasters Association	170
Michel, Hon. Robert H., a Representative in Congress from the State of Illinois	12
Miller, Howard O., Oakland, Ill	240
Moulder, Hon. Morgan M., a Representative in Congress from the State of Missouri	8
Oliver, Hon. James C., a Representative in Congress from the State of Maine	14
Pincock, Dee W., Assistant General Counsel, Federal Communications Commission	17
Rogers, Hon. Paul G., a Representative in Congress from the State of Florida	10
Seavey, Hollis M., director, Regional Broadcasters	321
Seltzer, Louis N., president, radio station WCOJ, Coatesville, Pa	281
Shipley, Hon. George E., a Representative in Congress from the State of Illinois	5
Sorenson, Alfred F., general manager, WKRS, Waukegan, Ill	266
Stephens, Louis C., attorney, Broadcast Bureau, Federal Communications Commission	17

Statement of—Continued Page
Strouse, Ben, president, and stockholder, WWDC, Inc., and WMBR, Inc. 319
Volger, George J., partner and general manager, Muscatine Broadcasting Co. (KWPC), Muscatine, Iowa 246
Watson, Chauncey B., De Kalb, Ill. 263
Additional information submitted for the record by—
Adams, Richard E., treasurer and general manager, radio station WKOX, statement of 270
Aiken, Hon. George D., letter from 337
Bentson, N. L., telegram from 340
CBS Radio, statement of Arthur Hull Hayes, president 237
Clear Channel Broadcasting Service: Number of daytime, limited, and unlimited time stations within continental United States as of March 1, 1960, tables 307–309
Coffin, Hon. Frank M., letter from, transmitting statement on behalf of Station WLAM, Lewiston, Maine 336
Cramer, Hon. William C., letter from 337
Daytime Broadcasters Association:
Relative skywave signal strength, including chart 211–213
Further statement of J. R. Livesay, chairman, board of directors 327
DeWitt, John H., Jr.:
Statement of 300
Supplementary statement of 303
Federal Communications Commission:
Amendment of part 3 of the rules to permit extended hours of broadcasting for daytime standard broadcast stations (docket No. 12274):
Memorandum opinion and order 22
Report and order 34
Inquiry into the advisability of authorizing standard broadcast stations to operate with facilities licensed for daytime operation from 6 a.m. to 6 p.m. (docket No. 12729), report 100
Letter from Frederick W. Ford, Chairman, transmitting further information 160
Miller, Lincoln W., telegram from 340
National Council of Farmer Cooperatives, letter from Homer L. Brinkley, executive vice president 338
Oliver, Hon. James C.: Correspondence from constituents 16, 17
Pullen, Reed, letter from 339
Rogers, Hon. Paul G.: Communications from Florida broadcast stations 10, 11
Saxon, R. M., statement of 325
Smith, Joe L., Jr., letter from 340
Thomas, Bob, manager, WJAG, statement of 333
Tucker, William F., telegram from 340
White, Roy B., Jr., letter from 339

DAYTIME BROADCAST STATIONS

MONDAY, JUNE 13, 1960

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND POWER
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met, pursuant to call, at 10 a.m., in room 1334, New House Office Building, Hon. Oren Harris (chairman) presiding.

The CHAIRMAN. The subcommittee will come to order.

Today the Subcommittee on Communications and Power has met to start hearings on H.R. 6676, H.R. 6868, H.R. 8286, H.R. 9627, and H.R. 10275, identical bills proposed by our colleagues, Messrs. Shipley, Moulder, Coad, Abernethy, and Pelly, respectively, all dealing with the operation of daytime radio broadcasters.

These bills provide that broadcasting stations licensed to operate during daylight hours would be authorized to operate at least from 6 a.m. to 6 p.m.

(The bills and departmental reports thereon follow:)

[H.R. 6676, 86th Cong., 1st sess.]

A BILL To amend the Communications Act of 1934, with respect to the hours of operation of certain broadcasting stations

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 303(c) of the Communications Act of 1934 is amended by inserting immediately before the semicolon at the end thereof a colon and the following: "*Provided*, That, in the case of broadcasting stations licensed to operate during daylight hours, the hours they are permitted to operate shall be at least from 6 o'clock antemeridian to 6 o'clock postmeridian".

(NOTE.—H.R. 6868, introduced by Mr. Moulder, of Missouri, H.R. 8286, by Mr. Coad, of Iowa, H.R. 9627, by Mr. Abernethy, of Mississippi, and H.R. 10275, by Mr. Pelly, of Washington, are identical with H.R. 6676.)

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D.C., October 5, 1959.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington D.C.

DEAR CHAIRMAN HARRIS: This is in reply to your request seeking this Commission's comments on H.R. 6676, a bill to amend the Communications Act of 1934 with respect to the hours of operation of certain broadcasting stations.

Enclosed please find six copies of our comments on this bill and H.R. 6868 and H.R. 8286 which are identical. The Commission was not requested to comment on the two latter bills but since the text was identical to H.R. 6676 the bills were included in our comments.

The Bureau of the Budget has informed the Commission that it has no objection to the submission of these comments to your office.

Sincerely yours,

JOHN C. DOERFER, *Chairman.*

COMMENTS OF FEDERAL COMMUNICATIONS COMMISSION ON H.R. 6676, H.R. 6868, AND H.R. 8286, 86TH CONGRESS, IDENTICAL BILLS TO AMEND THE COMMUNICATIONS ACT OF 1934 WITH RESPECT TO THE HOURS OF OPERATION OF DAYTIME BROADCAST STATIONS

Section 303(c) of the Communications Act of 1934 directs that the Commission "assign bands of frequencies to the various classes of stations, and assign frequencies for each individual station and determine the power which each station shall use and the time during which it may operate." Pursuant to this direction the Commission, inter alia, has made provision in its rules for the operation of some standard broadcast stations during daytime hours only, i.e., from local sunrise to local sunset. Some 1,700 stations have been licensed for such operation. H.R. 6676, H.R. 6868, and H.R. 8286 would each amend section 303(c) to provide that the hours such daytime stations would be permitted to operate should be at least from 6 a.m. to 6 p.m. This would mean that during the winter months all daytime-only stations would have statutory authority to operate beyond sunset and prior to sunrise without regard to the amount of interference that would result, not only to unlimited time stations, but to the daytime stations themselves. Additionally, it would require that Commission rules and policies governing the assignment of daytime-only stations be modified to take account of the additional interference involved. Thus, to the extent that additional restrictions on the conditions under which daytime-only stations can be licensed are required, the amendment would be self defeating. The Commission feels that the enactment of such legislation would be contrary to the public interest and inconsistent with good engineering practices.

The modification of section 303 is, of course, directed at one of the present problems confronting the Commission concerning the operating hours of daytime stations. This problem stems from the fact that the behavior of radio waves in the standard broadcasting band is vastly different day and night. Radio waves at these frequencies travel much farther at night than they do during the day and are thus capable of causing extensive interferences after sunset and before sunrise.

By taking the difference in daytime behavior and nighttime behavior into account it has been possible to license approximately 1,700 daytime-only stations that could not be licensed for unlimited time operation and to permit a large percentage of the unlimited time stations to operate daytime with higher power and with less restrictive radiation patterns than would have been possible if operating hours were extended into the nighttime period.

The complex rules under which these types of licenses have been issued as well as those reflected in treaties with our North American neighbors, are all keyed to the physical fact that nighttime begins when the sun goes down and ceases when it rises. While the long distance effects of the radio waves do not abruptly start and stop with sunset and sunrise, these are the significant moments with respect to transition from daytime to nighttime and vice versa.

Thus, while the proposed amendment would circumscribe the Commission's present power to "classify radio stations" and "to determine the power which each station shall use and the time during which it may operate" to the extent that any broadcasting station licensed to operate during daylight hours shall be permitted to operate "at least from 6 o'clock antemeridian to 6 o'clock postmeridian," it would not alter the necessity for consideration of the interference that would be in effect during winter months when there is a substantial interval of time between 6 a.m. and sunrise and between sunset and 6 p.m.

In meeting the heavy demands for radio service the Commission has authorized more than 3,400 standard broadcast stations, about half of which are licensed for operation during both daytime and nighttime hours, while the other half are licensed for daytime operation only. Many of the unlimited time stations operate with greater power and less restrictive radiation patterns during daytime than at night. Since so many stations are assigned to a relatively few frequencies (an average of more than 30 for each channel), it is understandable that even during the normal daytime hours relatively few stations render acceptable service throughout their normally protected service areas because of interference from other stations on the same or adjacent channels. Daytime interference conditions are more serious during the hours immediately preceding sunset and following sunrise, and in many instances would become intolerable if all daytime stations were permitted to operate after sunset and prior to sunrise during the winter months. The impact of the extended hours of operation by some daytime stations on the overall radio service available to the

people of this Nation could conceivably be so devastating that substantial numbers of people would be deprived of all standard broadcast service during the hours in question.

The Commission has, since January of this year, been considering, pursuant to an inquiry instituted under section 403 of the Communications Act of 1934, as amended (47 U.S.C. 403), the advisability of authorizing daytime broadcast stations to operate in a manner identical to that proposed in the subject bills.

On July 8, 1959, the Commission's inquiry into this matter was concluded; and a report was issued (a copy of which is attached hereto).[1] After a careful and diligent review of the comments and data which were submitted to this Commission we therefore concluded that the losses of standard broadcast radio service which would result from an extension of the hours of operation of stations licensed for daytime operation made it imperative that the proposal be denied.

We were unable to find an expression of any local need which was impossible of substantial fulfillment under existing rules for station licensing and which is so great or so pressing as to warrant widespread disruption of the existing radio service now enjoyed thereunder and relied upon daily by millions of citizens. Particularly, we found it would be undesirable and unwarranted to permit such disruption in those instances where the result as shown by the data would simply be the taking of regular service from rural farm areas and from small urban communities, which need radio vitally, and giving more stations—serving less area—to city and principal urban areas which are already relatively well supplied not only with standard broadcast radio programs but with other facilities for relaxation, intellectual stimulus, information, and recreation. Moreover, this conclusion is strongly reinforced by a comparison of the 1,761,622 persons in 357 communities, now receiving only skywave service, who would gain in lieu thereof a local groundwave service, with the 25,631,000 persons in 1,727,000 square miles, now receiving skywave service, who would lose entirely the standard broadcast radio service now available to them.

In substance, therefore, the Commission's report states that the losses of standard broadcast service which would result from adoption of such a proposal, together with the absence of any imperative local need which is impossible of substantial fulfillment under existing rules for station licensing, warrant the determination that it would be inadvisable to embrace a 6 a.m. to 6 p.m. proposal on a general or universal basis.

Moreover if this proposal were to be adopted it would be in conflict with proposed international treaties and agreements such as the North American Regional Broadcasting Agreement (NARBA) and the United States and Mexican agreement which contain provisions relating to the specific type of operation which would be permitted by the enactment of H.R. 6676, H.R. 6868, and H.R. 8286. Both the NARBA and the United States-Mexican agreement are currently before the Senate Foreign Relations Committee and the provisions contained in both are being recognized by the United States and the other signatory nations prior to ratification.

Consonant with the position that we have taken within the confines of our own jurisdiction, and considering all the circumstances, including those detailed in our July 8 report (Docket No. 12,729), we do not recommend enactment of H.R. 6676, H.R. 6868, and H.R. 8286.

Adopted: July 29, 1959.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., October 5, 1959.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce, House of Representatives, Washington, D.C.

MY DEAR MR. CHAIRMAN: This is in reply to your letter of May 1, 1959, requesting the views of the Bureau of the Budget on H.R. 6676, a bill to amend the Communications Act of 1934, with respect to the hours of operation of certain broadcasting stations.

The proposed legislation would allow radio stations licensed to broadcast during daylight hours only to operate at least from 6 a.m. to 6 p.m. In practice,

---

[1] Docket No. 12729, inquiry in re matter of authorizing daytime broadcast stations to operate 6 a.m. to 6 p.m.

this would mean that in the winter daytime-only stations could broadcast prior to sunrise and after sunset.

The Federal Communications Commission, in its report to your committee on this bill, is opposing the measure. Among other things, the report points out that radio waves have an appreciably greater range at night and thus give rise to greater interference problems before sunrise and after sunset. It notes that although the bill's enactment might result in improved service in urban areas already well served by radio, it would do so at the expense of service in rural areas, where service is relatively poor and interference problems would be serious. The report also notes that the bill, if enacted, would conflict with proposed international treaties and agreements.

In light of the objections set forth in the Commission's report, this office recommends against the enactment of H.R. 6676.

Sincerely yours,

WILFRED H. ROMMEL,
Acting Assistant Director for Legislative Reference.

The CHAIRMAN. While the bills are short and the language of the proposed legislation is quite simple, the issues involved are exceedingly complex. On the one hand, the enactment of this legislation runs into opposition on the part of the clear channel broadcasters; and on the other hand, the legislation involves international agreements which the United States has entered into with some other nations in this hemisphere.

For some time many people have been urging members of this committee to consider this proposal. The organization of daytime broadcasters has conferred with me and, I am sure, with other members, advising what they will be able to show. Many individual daytime stations throughout the country have been urging that some action be taken to give them relief. I have here a file which has come to me as chairman with innumerable letters from daytime stations, in which they have stated they are unable to appear in person but want to call to the attention of the committee their interest in this legislation.

The committee office has an even larger file of letters coming from many station operators throughout the country as well as communications from our colleagues in the Congress, asking that their position be made known to the committee. I do not think it would be appropriate to include all these personal communications in the record, but I do think they are entitled to have their positions made known. Therefore, for the record we will enter their interest by reference to the committee files.

Likewise, we have innumerable communications from various people throughout the country, wires, letters, and so forth, expressing their opposition and stating their reasons. These also will be made a part of the record by reference, in order that the committee may have the benefit of their interest.

I do not claim to be an engineer. I do not claim to know enough about the engineering problems here to express any opinion as to a possible solution in the public interest. It is technical. I have heard both sides of the argument.

In my judgment, there is a very great economic interest of certain groups involved in this issue. Daytime broadcasters were given a license to operate from sunup to sundown under the rules which the Commission promulgated many years ago. I can see their side that in the dead of the wintertime they have to go off at 5 o'clock or maybe at 4:30 in some instances, in some areas perhaps even before that, and

they do not come on again until the next morning, in some cases quite late in the morning in some places in the country. Naturally it affects their economic situation. Their contention is that they are not permitted to serve their community, and I think that is something which deserves grave consideration.

On the other hand you have the so-called clear-channel stations and regional stations. One can well understand the strong economic interest which they have in this issue if their operation is interfered with by the daytime station.

As I see it, our problem here is to try to find out what is the situation and how it affects our Nation and the public interest. That I have sought to do. I promised some time ago that we would have hearings on this question. I hope we can get down to the crux of the problem without taking too much time and find out what can be done.

I imagine we will hear such terms as "skywave," "groundwave," and so forth. I am here seeking the facts. Witnesses who will appear should give us a great deal of information on this problem.

Without making any further comments myself, I shall let somebody else talk.

Mr. AVERY. Mr. Chairman, since you have referred to the witnesses who might subsequently appear, I wonder if you could advise us at this time as to how many witnesses have requested the opportunity to testify.

The CHAIRMAN. As many as we have time to hear.

Mr. AVERY. The clerk has a list here.

The CHAIRMAN. Let us just say there are a lot of them.

Mr. AVERY. I would like to look at the list.

The CHAIRMAN. To start with, we have our colleague who apparently introduced the first bill which incorporates the present approach to this problem by the daytime broadcasters. I recognize that heretofore other bills have been proposed which have approached this problem in a little different way. Apparently the daytime stations have come to the conclusion that the present approach will be effective. Our colleague, Mr. Shipley, of Illinois, introduced H.R. 6676. Is Mr. Shipley here?

We shall be glad to hear from you, Mr. Shipley. We welcome you to the committee on this very important problem.

STATEMENT OF HON. GEORGE E. SHIPLEY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. SHIPLEY. Mr. Chairman and members of the committee, the bill which I introduced and am supporting before this committee, H.R. 6676, seeks to amend the Federal Communications Act of 1934 with respect to the permissible hours of broadcasting operation of radio broadcasting stations licensed to operate during daylight hours—the "daytimers." It is one of five bills currently before the House which propose to set definite hours of sign-on and signoff for daytime stations, lengthening hours of operation during winter. H.R. 6676 provides that daylight stations shall be licensed to operate at least from 6 o'clock antemeridian to 6 o'clock postmeridian.

I believe prompt affirmative action should be taken, in line with this bill, to resolve a situation which has been the subject of con-

sideration before several governmental bodies and committees of Congress during the past few years. Petition of the daytime broadcasting stations for extended hours of operation has been pending before the FCC for several years. The present practice of requiring these stations generally to sign off at local sunset and sign on no earlier than local sunrise has resulted in hardship to operators of the stations and to inconvenience and unsatisfactory service to their listening public.

While it is possible that some local stations may be able to broadcast before sunrise and after sunset, generally this is not permitted except by consent of the primary or dominant stations in the area, often more than 500 miles distant from the daytime station. Protection of clear channels and secondary service to rural areas may have been relevant in the years when the daytime broadcasting rules were first initiated, but the character of broadcasting, and economic and other conditions, have changed considerably since then. Several surveys show that radio listening has of late become more local as opposed to national clear-channel, distant-station listening, and many communities now have local broadcasting stations where economic conditions of former years precluded this service.

Although many of the communities served by locally owned radio broadcasting stations are rural, they do not live by the sun as did the farmers of an earlier age. The rural population now lives "by the clock" and has need for information bearing on their daily activities at the same times, whether the season be winter or summer. In fact, it is most important to have many of the radio services provided by local stations in the winter months—for example, information as to whether school buses will operate or not in stormy weather, and notice of any temporary shutdowns of plants, and so forth.

Out of a total of 107 AM channels in operation for broadcasting in the United States, the FCC has set up 6 local channels, on which approximately 937 full-time class IV stations operate. About half of the 46 clear-channel frequencies are reserved for exclusive use at night of a single class I–A station. On the remainder of the clear channels, more than one class I–B dominant station may be assigned to each channel, the stations providing mutual protection to one another by use of directional antennas. Secondary, or class II stations, are permitted assignment on all clear channels—on class I–A channels, daytime operation only class II stations are permitted, and on class I–B channels unlimited time class II stations are permitted if protection is afforded from interference with day and night class I–B station operations. However, there has been a freeze on these channels for the past 15 years.

There are now approximately 1,700 standard AM radio broadcasting stations in the United States which are permitted to operate only during daytime. Over 1,000 of these daytime-only stations are in cities and communities which do not have a local full-time station. My own district has nine of these daytime-only stations. Citizens of these communities are deprived of local radio service which citizens of the metropolitan areas enjoy. The clear channel and primary or dominant stations are concentrated in the metropolitan areas, while the local daytime stations are scattered throughout the country. Many of the stations providing secondary service for these communities after

sunset are network or network orientated and provide no local services to the secondary areas.

I shall not belabor the many points dealing with the question of extending the hours within which the daytime stations are permitted to broadcast. I am sure these are very well known to all here present as a result of the past several hearings, reports, and so forth. I submit that the provision for operation of these stations from 6 a.m. to 6 p.m. will pose no greater problems, and probably fewer problems, than are now encountered among broadcasting stations with respect to interference. On the other hand, all the daytime stations would be relieved of the many problems and burdens of trying to operate with a continually changing time schedule and the several million people depending on these services would have a dependable schedule of service. An argument advanced against this proposed time schedule for daytime operations submits that the same purpose could be accomplished through the use of directional antennas to preclude interference, a method which has been successfully used by former daytime stations to obtain full-time operation licenses. However, directional antenna equipment is very costly and such expense cannot be justified economically in the case of local stations in many communities.

The natural laws governing the quality control of radio impulses are factors in the operations of all radio broadcasting stations, not only with reference to daytime stations. In the hours nearest to sunrise and sunset, the clear-channel stations have not developed acceptable secondary skywave signals and their service range is limited to the actual interference-free groundwave service range. During the added hours requested for daytime-station operation, the secondary skywave signals for clear channels are in process of building up to night signal values and are weaker and less dependable than under full night skywave conditions.

Under the present sign-on and signoff conditions, the time schedule changes are set on a monthly average sunrise and sunset basis and vary from 30 minutes to an hour or more from one month to the next, the schedules of the stations in the northern part of the United States being subjected to the greatest variations. As a consequence, the number of hours of service which can be furnished by daytime stations varies with differences in locale.

The radio spectrum is a national resource which must be used in the interest of all the people. The frequencies do not belong to broadcasters as such, or to public servants or to businessmen; they belong to the people as a whole and are only licensed and administered through their Government. Engineering principles must be considered in conjunction with the will, desires and needs of the public for radio broadcasting services. The small local broadcasting station is more vital today than it was nearly 25 years ago when the basic policy was set for broadcasting. The standard AM radio fills a different role since FM and TV services have grown in importance.

I conclude by saying I urge favorable consideration of H.R. 6676 as providing a uniform compromise for actual sunrise-to-sunset service which will cause the least harm or inconvenience to the rest of the radio broadcasting industry, while greatly improving the service of the local daytime stations which furnish so vital a service to the many

communities in which there are no full-time radio broadcasting stations.

Mr. Chairman, I close by saying I do not know the technical points in a problem of this kind. I leave that to the people who will testify later in the hearing. I appear here today because of the need for extended hours. I do hope the committee will consider it favorably.

I thank you very much for this opportunity to appear here this morning.

The CHAIRMAN. In view of the time requirement, Mr. Shipley, we will not detain you by questions, but will thank you for your interest and your appearance here and your testimony.

Mr. SHIPLEY. Thank you for your courtesy.

The CHAIRMAN. The next witness is our colleague from Missouri and a member of the Committe on Interstate and Foreign Commerce, the Honorable Morgan M. Moulder. Mr. Moulder, we will be glad to hear you at this time.

STATEMENT OF HON. MORGAN M. MOULDER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. MOULDER. Mr. Chairman, there are some 1,700 radio broadcast stations in the United States that are permitted to operate only during daytime. Over 1,000 of these daytime-only stations are in cities and communities which are not served by local fulltime stations. The Federal Communications Commission some 12 years ago set up only 6 local fulltime channels out of the 107 channels in the AM broadcast spectrum so local radio stations had to take in most instances, frequencies and channels on which the FCC permitted operation only from sunrise to sunset. Through Federal regulation several millions of our citizens live in the communities which have a blackout of local radio broadcast service after sundown—they can't enjoy and have local radio broadcast service like their metropolitan fellow citizens.

Daytime stations and their audiences have a legitimate and important problem and the FCC has refused to resolve this problem. This goes along with the general tendency on the part of the regulatory agencies to favor the dominant members of the industry they are set up to supervise—in effect discriminating against small business of which the daytime stations are a part. It is a moral and social issue that must be solved by prompt action of the Congress.

My bill would establish firm hours of operation for radio stations licensed for operation during daylight hours. Under present restrictions, daytime broadcasters find it extremely difficult to plan their programs and to obtain sponsors for their programs because of the great variation in the amount of time which they may broadcast from week to week and month to month. Sunrise to sunset restrictions handicap the daytime broadcasting stations' ability to provide adequate service to the public in their communities throughout the Nation. During winter months when sunset is very early and prior to the time workers leave their places of employment for their homes, these stations are unable to continue broadcasting after sunset when it is most important to warn motorists of icy roads and streets and severe and dangerous weather conditions. Millions of U.S. citizens depend upon these daytimers for their only broadcast service. After sunset, they must presently depend upon one of the distant skipping,

fading, and weak skywave signals of the metropolitan clear channel stations. There is true and urgent public need for improved local broadcast service via extended hours of daytime broadcast stations. And I cannot too strongly recommend immediate favorable action by the subcommittee to solve this problem.

The CHAIRMAN. Does that conclude your statement, Mr. Moulder?

Mr. MOULDER. Yes, Mr. Chairman.

The CHAIRMAN. Are there any questions? If not, we appreciate the testimony of our colleague.

Mr. MOULDER. Thank you, Mr. Chairman.

The CHAIRMAN. The next witness is our colleague from Mississippi, the Honorable Thomas G. Abernethy. Mr. Abernethy, we will be glad to hear you at this time.

STATEMENT OF HON. THOMAS G. ABERNETHY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. ABERNETHY. Mr. Chairman, as you are aware, I have introduced H.R. 9627, one of the five identical bills under consideration by this subcommittee, which would authorize daytime broadcast stations to operate at least from 6 a.m. to 6 p.m.

I am a member of the Committee on Agriculture and I am sponsoring this bill because I consider such legislation essential to the welfare of the people of my State as well as to the national public interest.

The history of regulation by the Federal Communications Commission in this area makes it quite clear that the policies which it has adopted and the practices which it has followed have fostered and very largely created a concentration of broadcast power in the hands of a few large corporate interests. In doing this, the interests of the small stations have been sacrificed and the public has been denied the benefits of much needed local radio service.

As of January 1, 1960, the FCC had authorized a total of 75 radio stations in my State. Not a single one of these stations has been authorized to operate on any one of the 45 clear channels which have been reserved by the Commission for the handful of favored high-powered clear channel stations. The stations which have been authorized by the FCC in the State of Mississippi have been squeezed into overloaded radio channels so that in very large measure these stations operate with facilities that are marginal in terms of their position in the radio spectrum and the power they have been authorized to utilize. A majority of these stations, 40 in number, are restricted in their hours of operation—38 are daytime only and 2 are authorized to operate for specified hours.

Most significant of all is the fact that 21 of these daytime only stations are the only stations in their respective communities. In very large measure the areas served by these stations, as well as most of the other stations in the State of Mississippi, are rural and agricultural. The people in these areas are dependent on their local radio stations in numerous respects. For example, they depend on these local stations for their news and information with respect to weather, driving conditions, school activities, civic and charitable activities, and many other needs and interests. Their needs for these services start when they wake in the morning and end only when they go to sleep at night. But their waking hours are not governed by the rising and the setting

of the sun, and the fact which I find shocking and almost incredible is that, because of Government decree, their own local broadcast stations cannot serve them prior to sunrise or after sunset.

Nor is it any answer that needed radio services are provided by superpower clear channel stations located in large distant cities like New Orleans and Chicago or other distant and remote cities. These stations, in some instances located thousands of miles from any part of the State of Mississippi and other places which they claim to serve, cannot be heard in these places or if they can their signals are so weak and sporadic as to be useless. Equally important, however, is the fact that even if these distant stations could be heard they would not be listened to simply because they cannot and do not provide the local services that are required. They cannot give the Mississippi farmer local weather predictions, news of local farm commodities; they cannot tell parents of local school closings, motorists of weather conditions, the citizenry of local civic and charitable activities, etc. In brief, they cannot do the job that must be done and only the local stations can do that job.

I have used the radio station authorizations issued by the Federal Communications Commission in my State for illustrative purposes, but I know that the same pattern is repeated throughout the Nation. I therefore urge this committee to approve the legislation before it which would enable local daytime stations to perform the service that only they can render.

The CHAIRMAN. Are there any questions? If not, we appreciate your appearance and testimony, Mr. Abernethy.

Mr. ABERNETHY. Thank you, Mr. Chairman.

The CHAIRMAN. The next witness is another of our colleagues on the full committee, the Honorable Paul G. Rogers of Florida. Mr. Rogers, we will be glad to hear you at this time.

STATEMENT OF HON. PAUL G. ROGERS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF FLORIDA

Mr. ROGERS. Mr. Chairman and members of the subcommittee, with the permission of the Chair, I would like to include as a part of my statement in support of H.R. 6676 and related bills three communications typical of the large number I have received from interested parties both within and without my congressional district. These communications follow:

PORT SAINT JOE, FLA., *June 13, 1960.*

Congressman PAUL G. ROGERS,
House Office Building, Washington, D.C.:

WJOE urges passage of the five bills before Congress permitting daytime stations to remain on the air 6 a.m. to 6 p.m., or sundown, whichever is later, in order that we might better serve the public.

ROBERT D. SIDWELL,
Partner, Station WJOE.

WARN,
Fort Pierce, Fla., June 9, 1960.

Congressman PAUL ROGERS,
Congressman for the State of Florida,
Washington, D.C.

DEAR PAUL: I would like to urge you to amend the Communications Act of 1934 to allow the daytime broadcast stations to stay on the air until 6 p.m., or until sundown, whichever is later. As you know, WARN is presently a

daytime operation and this would be helpful to eleviate crowded schedules during the short winter months.

I would like to take this opportunity to thank you for keeping us posted with the reports on tape and hope you will stop by to see us the next time you are in the area.

Keep up the excellent work.

Very truly yours,

CHARLES C. CASTLE, *General Manager.*

WVCG,
Coral Gables, Fla., June 10, 1960.

Hon. PAUL G. ROGERS,
House of Representatives, Washington, D.C.

DEAR MR. ROGERS: I know you are familiar with the five bills which have been introduced in the House of Representatives proposing to amend the Communications Act, section 303(c), by allowing daytime broadcasting stations to operate from 6 a.m. to 6 p.m.

It is our firm conviction that this change would enable us to give materially better service to the people of south Florida, inasmuch as our sign-on and sign-off times would not constantly be juggled from month to month throughout the year.

I hope that you will lend your support to these bills.

Cordially,

GEORGE W. THORPE,
President and General Manager.

Mr. ROGERS. Mr. Chairman, for a number of years now daytime broadcasting stations have performed a valuable service for hundreds of communities throughout the Nation. Of the more than 3,500 standard broadcast stations in the United States today, more than 1,500, or about 42 percent, are licensed for daytime transmitting only, or stated in terms of reference used by the industry, from sunrise to sunset. As pointed out in earlier testimony, there are about 900 communities throughout the United States which have no fulltime stations but have one or more daytime stations.

The importance of these daytime stations to the local areas they service is that they are closely attuned to the needs of these areas just as distantly located stations are familiar with the needs of their own communities. Among the services they render are the reporting of local public features, local sporting events, news of local road conditions and driving hazards, local weather and emergency storm news, and various agricultural, educational, political, religious, and social happenings. The important thing to note in this connection, I think, is that these services are geared to the local area and are reflective of local needs and interest.

In my opinion, it is not unreasonable for these daytime stations to request a broadcast day in accordance with the clock as opposed to one which varies with the rising and setting of the sun. We know that as the year grows older, daylight hours grow shorter. In fact, in some areas of the country at some times of the year the number of daylight hours is reduced to 7½.

The primary objection to these proposals is based on the assumption that to permit an extension to these stations of their broadcasting day would be to unduly interfere with the transmission of long established higher priority stations with a resultant loss of service to a segment of their listeners.

In studying prior testimony on this point, it is my feeling that not enough conclusive evidence has been presented to sustain this conten-

tion. Such an argument is further weakened when we try to balance it against the public interest.

The service these daytime stations are in a position to offer the local communities they serve is unique in that local interest for the most part dictates programing. This service is not being and cannot be provided nearly so effectively by distantly located stations. Their request for fixed hours of programing appears to me to be warranted, if not permanently, at least on a trial basis as they have before requested.

I know that this distinguished committee will examine all aspects of these proposals with its customary thoroughness and will resolve the issues involved in the public interest.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much for your testimony, Mr. Rogers.

Mr. ROGERS. Thank you for the opportunity, Mr. Chairman.

The CHAIRMAN. The next witness is our colleague from Illinois, the Honorable Robert H. Michel. Mr. Michel, we are glad to welcome you. You may proceed with your testimony.

STATEMENT OF HON. ROBERT H. MICHEL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ILLINOIS

Mr. MICHEL. I am in favor of H.R. 6676, to amend the Federal Communications Act of 1934 in order to provide for extended hours of operation for radio broadcasting stations authorized to operate during daylight hours—the daytime-only stations. One of the principal benefits accruing from passage of this bill would be to bring uniformity into the hours of operation of these local stations, which now suffer a severe handicap because of the variation in hours of service they are able to supply. Present rules require that these daytime stations sign on no earlier than local sunrise and sign off no later than local sunset, a condition which affects both the station operations and the schedules of listeners.

There are now approximately 1,700 standard AM radio broadcasting stations in the United States which are permitted to operate only during daytime. More than 1,000 of these daytime-only stations are in cities and communities which do not have a local full-time station. Citizens of these communities do not have local radio service which citizens of metropolitan areas enjoy. The daytime stations are locally owned and widely scattered throughout the country, while the clear channel and primary, or dominant, stations are largely concentrated in metropolitan areas. Many of the stations providing secondary service after sunset for the communities served by daytime-only local stations are network or network-orientated and provide no local services to the secondary areas. While it is true that some of the daytime stations have been able to broadcast before sunrise and after sunset, this is generally not permitted except by consent of the primary or dominant stations in the area, which are often located 500 or more miles distant.

When the present system was set up, in an effort to provide radio service throughout as wide a geographical area as possible, many communities which now have local broadcasting stations were precluded from this service by economic conditions. It is most important for the people in the rural areas to have available many of the radio

services provided by the local stations, particularly in the winter months when weather conditions make it necessary to learn of closed roads, weather conditions, schoolbus schedules, and so forth, before the hour of sunwise.

The early signoff constitutes a burden to many local interests. Small businessmen depend on the local stations in competing with businesses in nearby population centers and the local advertisers compete with big business which can afford to sponsor programs on the networks and the large stations. The daytime station, like no other business, must adjust to hours of operation which change from month to month, whereas other business firms have set hours of closing and opening which do not vary from season to season.

Although the daytime stations were licensed with the hours of operation limitations, changes in broadcasting techniques, habits of listening, and other developments since the early days when channels were allocated would seem to call for a change in policy with respect to these very essential local broadcasting stations, in the interest of the fair, efficient, and equitable distribution of the broadcasting frequencies available for use in the United States and greater emphasis on the needs of those who have only one source of local broadcast service. Broadcast channels are limited and should be used to give the most diverse geographical distribution of service among communities and applicants.

I urge favorable consideration of H.R. 6676.

The CHAIRMAN. Thank you for your interest in this subject and your appearance here, Mr. Michel.

Mr. MICHEL. Thank you, Mr. Chairman.

The CHAIRMAN. The next witness is our colleague from Missouri, the Honorable A. S. J. Carnahan. Mr. Carnahan, we will be glad to hear you at this time.

STATEMENT OF HON. A. S. J. CARNAHAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. CARNAHAN. Mr. Chairman, I deeply appreciate this opportunity to appear before this commitee in support of these bills which will extend the operating hours of local daytime radio stations from a minimum period of 6 a.m. to 6 p.m., or sundown, whichever is later.

I have the honor, Mr. Chairman, of representing the Eighth Congressional District of Missouri, an area spread out over 19 counties in southeast Missouri. This is a rural area and the 19 counties of this district are presently served by 8 local radio stations. The people of my district depend on these stations for communication with each other and for keeping abreast of not only local happenings but national and international developments as well. Also, these stations serve a great business need in this rural area by providing a wonderful medium for advertising. Our people have come to depend on these local stations.

The present local sunrise to sunset hours of operation impose a very difficult hardship on management and personnel as well as listeners and customers of these stations. For example, one of the owners of a station in the Eighth Congressional District informs me that he is having a hard time quoting advertising rates for year-round advertising because of the irregular hours now imposed on them by this sunup

61308 O—60——2

to sundown provision. Many stations must cease operations as early as 4:45 p.m. during the winter months. Furthermore, it is difficult to assign definite duty hours for personnel because of the variation in length of the broadcast day from month to month.

The people of the Eighth Congressional District depend on their local radio stations for weather warnings, road conditions, school information (especially in winter) and, of course, as I have already indicated, for news. There is an added entertainment feature of these stations which is also important.

One engineer for a radio station within my district states to me that after sundown and local radio stations shut down "that there is absolutely no decent radio reception. Only a few of the clear-channel stations can be listened to and bad fading makes them very unreliable. All other stations are too garbled to be of any value."

The importance of daytime stations and of the problem before this committee is not to be found only in the fact that there are so many of these stations. Their importance is a product of the service they render to the particular communities in which they are located. This service can only be provided by local stations which are familiar with their own limited areas and are closely attuned to their needs. This service cannot be provided by stations distantly located which of necessity are concerned with their own communities.

This bill, Mr. Chairman, is in the interest of broadcast communications and in the public interest. It will help many people in my own rural area. I urge your favorable consideration of this bill. Thank you.

The CHAIRMAN. Mr. Carnahan, we appreciate your testimony on this subject.

Mr. CARNAHAN. Thank you, Mr. Chairman.

The CHAIRMAN. The next witness is our colleague from Maine, the Honorable James C. Oliver. Mr. Oliver, you may proceed.

STATEMENT OF HON. JAMES C. OLIVER, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MAINE

Mr. OLIVER. Mr. Chairman, the bill now before you, H.R. 6676, is one of dual value, providing benefits for both the radio broadcasting industry and the listening public. I wish to express my support of this bill at this time.

H.R. 6676 provides that daylight radio stations shall be licensed to operate at least from 6 o'clock ante meridiem to 6 o'clock post meridiem. It is one of five bills currently before the House which propose to set definite hours of sign-on and sign-off for daytime radio stations.

I believe prompt affirmative action should be taken to rectify the present practice of generally requiring these daytime radio stations to sign-off at local sunset and sign-on no earlier than local sunrise. This practice has resulted in a hardship to operators of these stations and to inconveniences and unsatisfactory service to their listening public due to the frequent changes in broadcasting time.

Under the present sign-on and sign-off conditions, the time schedule changes are set on a monthly average sunrise and sunset basis and vary from 30 minutes to an hour or more from one day to the next, the schedules of the stations in the northern part of the United States being subjected to the greatest variations. As a consequence, the

number of hours of service which can be furnished by daytime stations varies with the differences in locale.

Several recent surveys show that radio listening has of late become more local as opposed to national, distant station listening. Many communities now have local broadcasting stations where economic conditions of former years precluded this service. Although many of the communities served by locally owned radio broadcasting stations are rural, they do not live "by the sun" as did the farmers of an earlier age. The rural population now lives "by the clock" and has a need for information bearing on their daily activities at the same time each day whether the season be winter or summer. In fact, it is of great importance to have many of the radio services now provided by local stations. For example, in the winter months, information as to whether school buses will operate or not in stormy weather and notice of any temporary shutdowns of plants, and so forth.

There are now approximately 1,700 standard AM radio broadcasting stations in the United States which are permitted to operate only during the daytime. Over 1,000 of these daytime-only stations are in cities and communities which do not have a local full-time station. My own district has six of these daytime-only stations (WMMS in Bath, WCME in Brunswick, WLOB in Portland, WRUM in Rumford, MSME in Sanford, and WJAB in Westbrook). Citizens of these communities are deprived of local radio service which citizens of the metropolitan areas enjoy. The clear-channel and primary or dominant stations are concentrated in the metropolitan areas, while the local daytime stations are scattered throughout the country. Many of the stations providing secondary service for these communities after sunset are network or network oriented and provide no local services to the secondary areas.

I shall not belabor the many points dealing with the question of extending the hours within which the daytime stations are permitted to broadcast. I submit that the provision for operation of these stations from 6 a.m. to 6 p.m. will pose no greater problems, and probably fewer problems, than are now encountered among broadcasting stations with respect to interference. On the other hand, all the daytime stations would be relieved of the many problems and burdens of trying to operate with a continually changing time schedule and the several million people relying on these services would have a dependable schedule of service. The radio spectrum is a national resource, which must be used in the interest of all the people. The frequencies do not belong to broadcasters as such, or to public servants or to businessmen; they belong to the people as a whole and are only licensed and administered through their Government. Engineering principles must be considered in conjunction with the will, desires, and needs of the public for radio broadcasting services. The small local broadcasting station is far more vital today than it was nearly 25 years ago when the basic policy was set for broadcasting. The standard AM radio fills a greatly different role since FM and television services have grown in importance.

I urge favorable consideration of H.R. 6676, as providing a uniform compromise for actual sunrise to sunset service which will cause the least harm or inconvenience to the rest of the radio broadcasting in-

dustry, while greatly improving the service of the local daytime stations which furnish so vital a service to the many communities in which there are no full-time radio broadcasting stations.

I would also like to include several letters from constituents regarding this matter.

(The letters referred to follow:)

YANKEE-REBEL FARM,
Farmington, Maine, June 8, 1960.

Re Radio Station WCME, Brunswick, Maine.

Hon. JAMES OLIVER,
House Office Building,
Washington, D.C.

DEAR SIR: As lovers of good music, we are finding the greatest happiness in all of the programs of the above-mentioned station. We do not know of another station in our State that broadcasts such beautiful music and that has such good taste in its commercials.

For several years we have been so disgusted with the "rotten roll" that we hear from so many of our stations that we almost exclusively listened to Canadian stations where we got refinement and many educational programs.

We recently discovered the above-named station, and our entire family is delighted with its music and other programs.

Please do whatever you can to give this station the maximum number of hours on the air.

Sincerely yours,

C. H. DUCKER.

SOUTH PORTLAND, MAINE.

In my behalf, will you vote for the new bills that will add to the days broadcasting time for WIMM in Brunswick, Maine.

ROBERT B. FARLEY.

BRUNSWICK, MAINE, *June 11, 1960.*

DEAR CONGRESSMAN: Please vote for the five bills before the Congress regarding operation of daytime radio stations from 6 a.m. to 6 p.m., or sunset, whichever is later. This will enable our WCME in Brunswick to be on the air until 6 p.m. in the winter months.

Thank you.

CONSTANCE J. McKEEN.

PORTERS LANDING, FREEPORT, MAINE.

Congressman JAMES C. OLIVER,
House Office Building,
Washington, D.C.

DEAR SIR: In reference to the pending FCC regulation regarding local radio stations staying on the air until sundown or 6 p.m., whichever is later, please be advised that we thoroughly enjoy our local Brunswick station, WCME, and would like it to have as long broadcasting hours as possible.

Anything you can do to help in this respect will be appreciated.

Sincerely yours,

Mrs. GEORGE A. RICKER, Jr.

SHORE ROAD,
Freeport, Maine, June 9, 1960.

Hon. Congressman J. C. OLIVER,
House Office Building,
Washington, D.C.

DEAR SIR: I hope you will support the five bills which will increase the operating time on the air of radio station WCME, Brunswick, Maine. The fine music given by this station is greatly appreciated by many of us and I only wish more stations would devote some time to this class of music.

Very truly yours,

Mrs. WILLARD D. PRATT.

"ANDAFTER" ON BELL HILL,
Otisfield, Maine, June 7, 1960.

Congressman OLIVER,

DEAR SIR: It has just come to my attention that there is a bill before the House which, if passed, would slightly extend the permitted broadcasting hours of radio station WCME, Brunswick, Maine.

Anything you can do to help lengthen their broadcasting day will be appreciated. For my part I wish the station was on the air 24 hours a day, with greatly increased power.

It is the only station I know of that makes an attempt to broadcast decent music and does not subject the public to drivel of its diskjockeys.

Thank you.

Very truly yours,

L. W. LITCHFIELD.

The CHAIRMAN. We appreciate your appearance, Mr. Oliver.

Mr. OLIVER. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Frederick W. Ford, Chairman of the Federal Communications Commission.

Mr. Ford, we are glad to have you back with us. You seem to be busy these days, but nevertheless if these matters are to be resolved, we must consider them here. We appreciate your cooperation with us on these important problems.

I also observe that you have with you, supporting or otherwise, other members of the Commission, and staff members, too.

STATEMENT OF FREDERICK W. FORD, CHAIRMAN, FEDERAL COMMUNICATIONS COMMISSION; ACCOMPANIED BY COMMISSIONERS ROSEL H. HYDE, T. A. M. CRAVEN, AND JOHN S. CROSS; JAMES E. BARR, ASSISTANT CHIEF, BROADCAST BUREAU; LOUIS C. STEPHENS, ATTORNEY, BROADCAST BUREAU; JOHN L. FITZGERALD, GENERAL COUNSEL; CHARLES R. ESCOLA, ASSISTANT GENERAL COUNSEL; AND DEE W. PINCOCK, ASSISTANT GENERAL COUNSEL

Mr. FORD. As you know, Commissioner Bartley is out of the country. Commissioner Lee had an official matter this morning which he had had scheduled for some time, and he said he would come in the event he was needed. All the other Commissioners are present.

The CHAIRMAN. Those are Mr. Hyde, Mr. Craven, and Mr. Cross.

Mr. FORD. Yes. I have with me Mr. James Barr, Assistant Chief of the Broadcast Bureau, who is an engineer, and Mr. Charles Escola, who is in the General Counsel's Office.

Mr. Chairman and members of the subcommittee, the legislation before you, H.R. 6676 and four other substantially identical bills, would require the Federal Communications Commission to authorize all so-called daytime standard broadcast radio stations to operate a minimum of 12 hours daily, 6 a.m. to 6 p.m.

In comments submitted last year on three of the bills before you, H.R. 6676, H.R. 6868, and H.R. 6286, and again this year on H.R. 10275, the Commission recommended against their enactment. It is still our considered judgment—and we are unanimous on this—that the adoption of this legislation would be most undesirable. Our views are based upon prolonged and thorough consideration of proposals for extension of the broadcast hours of daytime stations in the

course of two lengthy proceedings conducted during the past 3 years by the Commission.

By way of establishing the background against which this proposal has arisen, I should like to sketch briefly the basic allocation framework in the standard broadcast service. The standard broadcast band has a total of 107 10-kilocycle channels. Thus, it has been necessary to accommodate 3,500 operating stations in 1,070 kilocycles of spectrum space. These 3,500 stations are assigned to clear, regional, and local channels. The basic objectives of this allocation, among others, are (*a*) to provide service to all of the people of the United States, to the extent possible, (*b*) to encourage the development of as many local outlets as possible, (*c*) to foster the availability of multiple, competing signals, and (*d*) to distribute radio service fairly and equitably among the several States and communities.

Since 1945 there has been a tremendous growth in the AM service, which has been fostered and encouraged by the allocation and assignment policies of the Commission. During this period the number of AM stations has increased from 925 to over 3,500. At the same time, the number of communities with one or more stations has grown from 566 to 2,000.

In order to make this growth possible, certain technical limitations and restrictions have had to be imposed to attain optimum balance between usable service and objectionable interference, which increases as greater numbers of stations are assigned to each channel. For example, we have squeezed in a number of unlimited-time stations by requiring them to establish directional antenna arrays or to reduce their power during nighttime hours. Similarly, and a very important factor in the expansion of AM stations, was the Commission's decision to permit daytime-only operation. Only in this way was it possible for many hundreds of communities to enjoy the benefits of having local stations. Of the stations currently in operation, approximately 1,400, or 40 percent, are daytime-only stations.

It is possible to permit many more stations to operate during the day than at night because the reach of interfering signals during the day is much shorter than at night. It is therefore possible to crowd stations in closer during the day than at night without creating undue interference. This key difference between daytime and nighttime conditions has created both the opportunities for growth and the specific problem now facing us.

We recognized, of course, from the outset that daytime-only operation improves inconvenience on the broadcasters and their listening public. Every member of the Commission is keenly aware of the very understandable reasons which have impelled the daytime broadcasters to seek extension of their hours of operation, both in protracted proceedings before the Commission and through the enactment of an amendment to the Communications Act. Certainly, if some feasible means of relieving this situation were available or could be devised, it would be desirable to do so.

There are two other clarifying points with respect to the daytime stations which need to be made. Unlike local stations, which are limited to 250 watts, daytime stations vary in power from 250 watts up to 50 kilowatts. Approximately 1,150 daytime stations have

power ranging between 500 and 5,000 watts. Moreover, daytime stations also are not limited to one of the classes of AM channels, but are assigned both to clear channels and regional channels. Of the 1,400 daytime stations, approximately 500 are on clear channels and 900 are on regional channels.

A second pertinent point concerning daytime-only operation is that in fact there is no sharp dividing line between daytime and nighttime propagation conditions. Actually, skywave transmission which carries signals so much farther at night starts an appreciable development 2 hours before sunset and continues building up until about 2 hours after sunset, when it reaches a level which for present purposes may be considered as relatively constant until 2 hours before sunrise. It then starts to undergo a similarly progressive deterioration until it again reaches a negligible point about 2 hours after sunrise.

You will readily see from this that a considerable degree of compromise has already entered into permitting daytime operation to continue as late as sunset. In fact, the Commission has been called upon to conduct lengthy proceedings to ascertain facts concerning daytime skywave interference and has found on the basis of voluminous data that during the 2-hour period preceding sunset—as well as during a similar postsunrise period—very considerable portions of the primary service areas of the clear-channel stations are subjected to serious inroads of destructive interference to service to many millions of people. While in its *Daytime Skywave* proceeding—docket No. 8333—the Commission concluded that the public interest would better be served by continuing to tolerate that daytime interference (with very minor exceptions applicable only to new stations), we went to the utmost possible limit in permitting daytime stations to continue to operate as at present down to local sunset. The proposal before you would have the effect of prolonging that interference after sunset and of increasing it to much more severe extremes because of the progressive buildup of skywave transmission which continues to increase until 2 hours after sunset.

As I believe you are aware, the Commission has recently conducted two exhaustive proceedings in which an effort was made to evaluate the merits of proposals that daytime stations be permitted to operate during some nighttime hours. In docket No. 12274 we considered a petition by the Daytime Broadcasting Association that all daytime stations be permitted to operate from 5 a.m. or sunrise, whichever is earlier, to 7 p.m. or sunset, whichever is later. After concluding on the basis of an overwhelming mass of evidence that the public interest could not be served by such action, the Commission in a separate proceeding—docket No. 12729—attempted to ascertain whether it might be possible to justify authorizing all daytime stations to operate at least from 6 a.m. to 6 p.m. This is the proposal before you in H.R. 6676. During the winter months this would, depending on latitude, permit daytime stations to operate as much as 2 hours after local sunset. The Commission felt that, notwithstanding the overwhelming weight of the case which had been made against 5 a.m. to 7 p.m. operation in the previous proceeding, it would be desirable to ascertain whether less extensive prolongation of daytime operation into night-

time hours would sufficiently overcome the objections to the longer operation. This was the "6 to 6" proposal. It was again forced to conclude that such general extension of the hours of the operation of daytime stations would not serve the public interest.

The Commission found in its analysis of the record compiled in these two proceedings that no matter how it approached the problem it was clear that the number of persons who would lose service as a result of any extension of the hours of operation of daytime stations vastly exceeded the number who would gain additional service as a result of such an extension of operating hours. Moreover, as skywave interference progressively increases after sunset the numbers of persons able to use the prolonged service from daytime stations constantly diminishes, while the much larger number losing service steadily increases.

The Commission also found that in many of the geographical areas which would lose such service the number of other available radio signals is relatively limited.

In view of these findings the Commission concluded, as set forth above, that a general extension of the existing hours of operation for daytime-only stations would not serve the public interest.

Some parties urging the extension of operating hours for daytime stations have alleged that a different conclusion could be reached if the Commission were to take into account listener surveys which show that in some areas where clear-channel stations provide usable signals they are not generally listened to. The Commission believes that listener surveys can be used as a working tool in standard broadcast allocations only very cautiously and to a very limited extent. Nevertheless, in an effort to study the nature of the allegations the Commission obtained the nationwide listening survey from A. C. Nielsen Co., a research organization which performed a county-by-county survey in the spring of 1956.

This survey showed that the degree of listening to available signals from clear-channel stations ranges all the way from actual listening beyond the service areas as defined by the Commission, to cases where not all of the wide-area "skywave" service is actually listened to. In our opinion listener surveys fail to support any general conclusions justifying extended hours of operation for all daytime stations. With respect to the groundwave or primary service, we have pointed out that by sunset the increment of skywave interference has already reached such proportions that these primary service areas are markedly reduced. If all daytime stations are permitted to operate after local sunset the primary service area of all of the stations, on all except 6 of the 107 standard broadcast channels would be still further reduced. The net result would be that millions of people would be deprived of services now available to them and that many would be without any substitute source of service.

For example, we have found that in a typical case a 5-kilowatt regional station has a normal night service area encompassing approximately 391 square miles. If the daytime stations are permitted to continue to operate after sunset, this would be reduced to 246 square miles for the early part of the postsunset period and to 157 square miles in the latter part.

Similarly, the normal night service of a typical clear channel type station would be reduced from 12,000 square miles to 1,200 square miles. In the case of a daytime station itself we find its normal daytime service area reduced progressively over the evening transition period from a radius of 30 miles to a radius of less than 2 miles under the worse conditions. The maximum served after sunset is a radius of about 5 miles. It may be pointed out that certain daytime stations operating after sunset under emergency conditions as Commission rules permit have not actually suffered the severe curtailment of service we anticipate. This is quite simply explained by the fact that no other daytime stations are operating.

The basic point I wish to make here is that we have found no way to permit broad-scale operation by daytime stations after sunset and at the same time restrict interference to areas in which—according to the listener surveys—local residents do not use an available signal. For this reason listener surveys, in the Commission's judgment, cannot justify the adoption of the proposals now before you, in H.R. 6676 and associated bills.

Aside from the domestic considerations the United States is a party to agreements with all our neighboring countries which make it impossible to permit a general extension of the hours of operation of the daytime stations. Necessity to protect the stations operating in those countries from harmful interference created by stations operating in the United States precludes the postsunset operation of the greater portion of our stations presently restricted to daytime only.

Moreover, our experience in negotiating these agreements—which were ratified by the Senate only this year—and subsequent informal inquiries concerning some possible modifications in the degree of protection from interference required by the agreements have convinced us that further discussions on this point would be to no avail.

Apart from all other considerations mentioned so far, I should point out that there is available a means of providing service into nighttime hours which avoids the tremendous interference created by the step proposed in H.R. 6676. There are 100 channels allocated to FM broadcasting which provide ample spectrum space for high grade service. FM service is much less susceptible to destruction through interference under nighttime conditions than AM service.

I think, Mr. Chairman, that what has been said here, when considered in the light of the details submitted for your record, clearly shows that the proposal before you involves highly complex problems which are ever-present in the allocation of 107 AM frequencies for over 3,500 standard broadcast stations. Thus, after many years of concern with the problem here raised it does not appear to the Commission that the solution is to be found by generally permitting daytime stations to operate before sunrise or after sunset.

At this point, Mr. Chairman, I offer for the record the Commission's reports and orders in the two procedings to which I have referred in my testimony.

The CHAIRMAN. Very well. That will be received for the record.

(The documents referred to follow:)

Before the
FEDERAL COMMUNICATIONS COMMISSION FCC 59-10
Washington 25, D. C. 67581

In the Matter of	)	
	)	
Amendment of Part 3 of the Rules	)	
to Permit Extended Hours of	)	Docket No. 12274
Broadcasting for Daytime Standard	)	
Broadcast Stations.	)	

MEMORANDUM OPINION AND ORDER

By the Commission: Commissioner Lee concurring with the exception of the ordering clause setting up the additional proceeding.

1. The Commission has before it a petition, filed October 20, 1958, by Daytime Broadcasters Association, Inc. (DBA), requesting reconsideration of the Commission's Report and Order released in this proceeding on September 19, 1958 (FCC 58-891), denying DBA's petition, filed December 9, 1955, in which DBA requested inter alia, that all daytime standard broadcast stations be authorized to operate from 5:00 A.M. or local sunrise (whichever is earlier) to 7:00 P.M. or local sunset (whichever is later), in lieu of the sunrise to sunset hours provided for in the present rules. In addition to reurging favorable action on its earlier request, DBA now asks, as an alternative, that daytime stations be permitted to operate from 6:00 A.M. or local sunrise (whichever is earlier) to 6:00 P.M. or local sunset (whichever is later). Oppositions to the DBA petition were filed by a number of parties who had previously filed comments opposing the original DBA proposal. On November 24, 1958, DBA filed a reply to these oppositions.

2. In its Decision herein, the Commission held that amendment of the Commission's Rules as proposed by DBA would not serve the public interest. The Decision gave careful consideration to the various effects of the proposal. It found that the population which would gain service during the non-daytime hours involved (before sunrise and after sunset) is vastly exceeded by the population which would lose the service of existing stations during these hours because of additional interference from the operation of the daytime stations; that, generally, there would be vast impairment of primary service and much loss of service to rural areas during the hours involved; that on virtually all of the clear channels all secondary service--the only service available to some 20 million persons in about one-half of the United States--would be destroyed during these hours; that while a first non-daytime primary service would be afforded to some populations during the hours involved, extensive "white areas" would be created by the resultant interference, in which the population would lose all primary service during these hours; that the daytime stations so operating during non-daytime hours would serve only a very small fraction of the areas and populations which they serve during daytime hours; that as a result of the additional interference many full time stations would be

limited in service so that they would not properly serve the communities to which they are assigned; and, finally, that severe interference to foreign stations, inconsistent with international agreements and understandings, would prevail. The Report and Order also dealt with other arguments advanced by DBA and certain other proponents, including the need for radio service in emergencies; the types of radio service most needed to serve local areas (i.e., locally originated service vis-a-vis service from distance stations), the economic interests of daytime stations, and the precedent said to be afforded by the practice under Section 3.87 of the Commission's Rules.

3. DBA contends that the Commission erred in not granting its December 5, 1955 petition for the following reasons:

(a) In its September 19, 1958 Report and Order the Commission failed to investigate appropriately and attach decisional significance to radio listener preferences.

(b) The Commission's finding that, under the DBA proposal, more listeners would lose existing service than would gain additional service is based upon erroneous application of the Commission's engineering standards.

(c) The Commission failed to note that during the hours in question the skywave signals of stations allegedly interfered with are unstable, erratic, and thus of a non-listenable character.

(d) The Commission's decision is devoid of findings that the program service furnished by stations to which interference would result is service for which a need exists in the alleged areas of interference.

(e) In determining the extent of "white areas" that would result from adoption of the proposal, the Commission failed to take into account present television coverage.

(f) The Commission failed to attach proper significance to the fact that operation as contemplated by the DBA proposal is already proved to be workable by the practice under Section 3.87 of the Commission's Rules.

(g) The Commission erred in predicating its decision upon unratified international agreements with other North American countries.

Each of these contentions is treated below.

Listener Preference and Practices

4. DBA argued in its comments in support of its original petition that the Commission's allocation scheme is archaic in that distant stations do not provide a useful service for communities located at some distance from them. DBA asserted that persons are no longer content to listen to the signals of distant stations. We noted in our Report and Order that certain mail response tabulations tended to show that a considerable number of persons living great distances from clear channel stations listen to the nighttime signals of these stations. We further concluded that no data at the Commission's disposal tended to support DBA's argument that the listening habits of the nation have changed in such a way that distant stations should no longer be protected or that daytime stations should be permitted to operate during extended hours in spite of the resultant interference disclosed in this proceeding. In its petition for reconsideration, DBA contended that the aforementioned mail response data was unreliable, and without itself submitting any listener preference data, asserted that the Commission was duty-bound itself to conduct or to contract with a reputable organization for the conduct of a nationwide listener survey to ascertain listener preferences. DBA argued that such a survey would bear out its contentions.

5. The Commission's September 19, 1958 Report and Order was not predicated upon data obtained from any listener survey.[1] Our disposition of the DBA petition for reconsideration is likewise not based upon any such data. Since our September 19 decision was issued, however, and prior to the filing of the subject petition for reconsideration, the Commission obtained from the A. C. Nielsen Company a nationwide county-by-county coverage survey, labeled "Nielsen Coverage Service No. 2".[2] We have examined this survey to ascertain whether it provides support for DBA's above-mentioned contentions with respect to listener preference and practices. We have found no appreciable support for this.

Technical Considerations

6. The petition for reconsideration asserts that the Commission erroneously accepted and attributed decisional value to data on the number of people who would gain or lose radio service under the proposal. We understand this to

---

1/ Paragraph 53 of our Report and Order recited certain listener data submitted by parties to this proceeding, including the Clear Channel Broadcasting Service and Storer Broadcasting Company. No decisional weight was attached to this material however. The Commission noted, after discussing such information, that " . . . no data of which the Commission is aware, shows or tends to show that the listener habits of the nation have changed in such a way that distant stations should no longer be protected or daytime stations be permitted to operate in spite of the resultant interference of the magnitude involved here".

2/ Nielsen Coverage Service No. 2 was conducted during March-May, 1956. The most recent comprehensive survey available, it covered the entire United States on a county-by-county basis, using a combination of personal interviews and mail balloting to determine station selections of respondent families. Each family was asked to furnish lists of radio stations listened to in "the last month or so" together with the frequency with which they listen to these stations before and after dark.

be a reassertion of contentions made earlier in the proceeding by DBA and other proponents of the proposal that Figures 1 and 2 of Section 3.190 of the Rules are inapplicable for use in whole or in part to predict the skywave interference conditions and the populations and areas affected thereby during the proposed operating hours after sunset and before sunrise, notwithstanding the express provisions of Section 3.182, concerning the engineering standards of allocation, that the existence or absence of objectionable interference due to skywave propagation shall be determined by reference to the appropriate propagation curves in Figure 1 or Figure 2 of Section 3.190. The petitioner also asserts that the skywave curves given in Figure 2 are based upon data centered upon the hour, as a point of time, occurring two hours past sunset and that accordingly where reference has been made in the proceeding to an instantaneous value of interference, at 7:00 PM for example, such interference value has in fact been arrived at by using data compiled over a period of time extending 30 minutes past 7:00 PM, when skywave conditions are more fully developed. Such a statistical treatment of the original data, the petitioner asserts, coupled with the acceptance and use by the Commission of information so derived has resulted in distortion and exaggeration of the loss of radio service which would result from the proposal.

7. The Commission gave careful consideration in its Report and Order (Paragraphs 36, 37 and 38) to these and to other views of the petitioner and also carefully considered the comments of other parties to the proceeding.[3] We found (paragraph 37) that the diurnal curves identified as Figures 2 and 5 of the Commission's Exhibit 1 in Docket 8333, from a statistical viewpoint, afford the best available data when used in the manner set forth in the exhibit, and in the Report of Committee III in Preparation for the Clear Channel Hearing, Docket 6741, dated January 15, 1946, together with Figure 2 of Section 3.190.[4] We considered the fact that much though not all of the data concerning the populations and areas affected by the proposal had been prepared using these diurnal curves and the further fact that the parties who filed other data prepared without using the diurnal curves followed procedures which afforded a fully satisfactory degree of accuracy. We held that any slight inaccuracies reflected in the entirety of the data (which we found to be sufficiently complete, consistent with other data, and nonspeculative to warrant its use (paragraph 36)) and the slightly disparate nature thereof were matters insignificantly small to be of decisional significance. Upon further review of the data we find no question that the accuracy is fully adequate to support the findings and conclusions which we have made. Moreover, the petition for reconsideration has not supplied any information which could be found to differ from the data already filed nor does it contend that in any instance there is a significant error in the populations and areas found to receive service or to be affected by interference from any station. We conclude that our decision

---

[3] It is appropriate to observe that the qualifications of the professional engineers who prepared data and submitted the same by affidavit have not been challenged.

[4] While Figure 1 of Section 3.190 pre-dates the formation of Committee III on March 16, 1945, the Committee Report shows at Figure 3.5 the close agreement of the 50% of the time curve from Figure 1 with the average median value of instantaneous field intensity as based on the Committee III data.

was correct in this regard. However, it appears appropriate, in view of the allegations advanced in the petition for reconsideration and the substantial use made of diurnal curves in the proceeding, to append copies for illustration and identification. Copies of the Composite Diurnal Curves identified as Figures 2 and 5 of the Commission's Exhibit 1, dated June 4, 1947, in Docket 8333 are appended hereto as an attachment. (We have held in the Report and Order that other similar curves present no conflict of significance herein). The attachment shows, in addition to other data, the substantial strength of the skywave interfering signals (mv/m) present at sunset due to the rapid increase in strength begun earlier, and the further rise following the sunset time.

8. With reference to the analytical treatment afforded the data upon which the Commission skywave curves are based, similar views, critical of comparable statistical procedures were urged in the Daytime Skywave Proceeding (Docket 8333). There the Commission disposed of the contentions which had been raised as follows (paragraph 21, footnote 12, Proposed Report and Order released March 12, 1954):

> "With respect to the statistical treatment given certain data submitted in the processing, some question was raised regarding the median field intensity for the hour in which sunset occurs. Data for this hour was taken beginning one-half hour before and ending one-half hour after sunset, on the theory that the instantaneous field at the moment of sunset is fairly given by the field intensity which is exceeded during one-half of the time of this hour interval. The objection made is not that this technique is inexact but that it is inappropriate to employ values taken after sunset, which increase the median value, in view of the fact that daytime stations cease operation at sunset. But the method used is clearly appropriate since the situation is one involving widely varying instantaneous fields and thus, the taking of a single measurement at the moment of sunset cannot supply a representative value. The lower fields in the portion of the interval prior to sunset tend to compensate the higher fields after sunset. Finally, we note that the challenge to this statistical technique is unsupported by any expert evidence."

We believe the explanation there expressed is equally valid here and that our action in the Report and Order correctly reflected statistical methods fully appropriate for the handling of the data. Our Report and Order distinguished the effects of the proposal during the first hour following sunset (and before sunrise) from the effects during the second and succeeding (or earlier) hours. Thus interested parties may readily analyze the effects of the proposal in terms of their local sunrise and sunset time.5/

5/ Thus, we stated (Report and Order, paragraph 37) that "This data is properly to be used in terms of the sunrise and sunset times used by the Commission in its Rules." We do not agree that we have thus placed the rule "paramount to the scientific facts", stated by the petition for reconsideration. The matter involved is instead one of consistency of data serving to avoid confusion.

9. The petition for reconsideration asserts that the Report and Order gave no weight to the contention that during the hours in question the skywave service is "unstable, erratic and thus of a non-listenable character." But the Report and Order reflects a careful consideration of the character of the existing skywave radio service during the hours affected by the petition. (See e.g., Paragraphs 5, 32, 33 and 52). Upon reexamination thereof pursuant to our consideration of the petition for reconsideration, we believe the Report and Order to be fully adequate in this respect.

10. The petition for reconsideration asserts that the Commission has failed to evaluate correctly the hours, in terms of the percent of the time during the year, which are affected by the proposal, and that the interference could not be as serious in percentum as the Report and Order has found it to be. We have reexamined our Report and Order in this respect and believe it reflects meaningful evaluations which are entirely appropriate in the field of radio wave propagation. We are unable to find any support for the view expressed by the petitioner that its proposal was improperly evaluated. We observe further that the extent of the interference found to exist under the proposal was based upon the statistical methods which are of general applicability in broadcast allocations both within the United States and in negotiations with other North American countries. We can find no sufficient reason for a deviation therefrom in this instance.

Other DBA Arguments

11. Petitioner contends that the September 19, 1958, Report and Order, while recognizing the need for more locally originated programming by daytime stations, is devoid of findings that the program service furnished by the full-time stations to which interference would result is service for which a need exists in the areas of interference. The contention is incorrect. We noted in paragraphs 49 and 50 of the decision that the needs and advantages of extended hours of operation, insofar as they concern the general public in the communities and areas involved, are common to all radio service, and any change in allocation rules which results in degradation of overall radio service results in less meeting of the various needs and provides for less of the advantages than at present. Moreover, we expressly noted in paragraph 53 of the decision the showing made by a number of full-time stations as to their programming specifically geared to outlying communities and rural areas within their service contours, including agricultural programs, civic programs for each community, and local sporting events.

12. In its petition for reconsideration, DBA has for the first time advanced the novel thesis that, in evaluating the extent of "white areas" which would result from adoption of the DBA proposal, the Commission should take into account present television coverage, which provides television service to 90 percent of the nation and therefore to most or all of the "white areas" -- areas without any AM radio service during the hours involved -- which would be created. This approach we must reject. We do not believe that the availability of television service in a particular area is sufficient reason that the population therein should be deprived of AM radio service, particularly since standard broadcast service is the medium which the public is able to utilize at the least expense for receiving equipment and under the widest variety of circumstances (at home, at work, in automobiles, etc.). The provision for at least one AM service to all of the people of the nation has always been, and remains, one of the basic objectives of the Commission's allocation policy, just as is the provision for adequate television service. Section 307(b) of the Communications Act contemplates an equitable distribution of broadcast service of each class; and the basic aim of the Commission is to foster ample, nationwide service in each of the broadcast media (Tupelo Broadcasting Co., 12 RR 1233, 1250.)6/. In view of these considerations, we reaffirm our conclusion that the needs and advantages of the local radio service which would be gained under the extended hours proposal, are substantially outweighted by the needs for and advantages of the much greater amount of service of existing stations which would be lost.

13. Petitioner also argues that the feasibility of its proposal has already been proved by the practice under Section 3.87 of the Commission's Rules, which permits all stations except certain Class II stations to begin operation with their daytime facilities at 4:00 A.M., unless undue interference is caused thereby to full time stations. DBA asserts that "virtually all" regional daytime stations so operate. We are firmly of the opinion, as stated in the Report and Order, that pre-sunrise broadcasting with daytime facilities, as permitted by this Rule, is no basis for favorable consideration of the DBA proposal. We stated in our decision (para. 55) that the fact that few complaints have been received from full time stations is doubtless a reflection of the fact that many full time stations do not go into operation until after 4:00 A.M., and interference conditions are thereby minimized; whereas under the DBA proposal daytime stations would be able to operate in the early evening, when all full time stations are in operation, with vast interference resulting. DBA challenges as unsupported and irrelevant our assertion that many full time stations do not go into operation until after 4:00 A.M. and states that, even if they commence operation at some later hour such as 5, 6 or (in winter) even 7:00 A.M., the same interference conditions now exist as would exist in the hours after sunset under

6/ We note in passing that DBA's assertion that 90% of the American people have television service available, if it has any relevance at all to this proceeding, could be used in furtherance of the argument that little, if any, need exists for extending the hours of daytime stations, because such stations are located primarily in areas where television service is received.

its proposal. Our assertion as to the sign-on time of many full time stations was based on data in the Commission's files, which is also a matter of common knowledge, that many such stations do not go on the air until 5:00 A.M. or after. 7/ It is possible that full time stations do not feel impelled to complain about such interference as does exist during the short pre-sunrise periods thus involved. Therefore, as we stated, the relative absence of complaints concerning undue interference during pre-sunrise hours is no indication at all of the conditions which would prevail after sunset, when all full time stations are in operation and the potential audience is great. The Commission is charged with making and administering rules and policies designed to afford adequate service to the entire population of the nation, using for this purpose the best factual data available to it. With reference to the post-sunset hours, when all full time stations are on the air, it cannot permit a basic allocation decision concerning these hours to turn upon the presence or absence of complaints concerning interference under other circumstances. Moreover, the DBA proposal is substantially different from the provisions of Section 3.87 since the latter affords a privilege which may be cancelled at any time by the Commission upon a finding of interference to a full time station, while the subject proposal would permit non-daytime operation by daytime stations as a matter of right, to which such stations would be entitled regardless of the amount of interference caused and consequent harm to the public interest.

14. DBA contends, finally, that the Commission erred in predicating its decision upon the as yet unratified international agreements with other countries in the North American region. DBA asserts that nothing in these agreements prevents the negotiation of separate agreements looking toward hours of operation for daytime stations for periods before sunrise and after sunset. Our determination that the DBA petition should be denied was not predicated solely or primarily upon international problems. We decided that the proposal would not serve the public interest, convenience and necessity from the standpoint of domestic policy for abundant reasons enunciated in the Report and Order. We are still firmly of this view.

7/ A check of the operating hours of the full time AM stations in the Washington, D. C. area (other than Class IV) as stated and proposed in their 1957 renewal applications, shows that the one clear channel station (WTOP) and one of the five regional stations (WMDC) operate all night six nights a week and therefore are in operation during the pre-sunrise period; but the other four full time regional stations (WRC, WEAM, WMAL and WGMS) sign on, respectively, at 5:30, 6:00, 6:00 and 6:30 A.M. on weekdays and 7:00 A.M. or later on Sundays. Similarly, a sampling of the composite weeks of recently granted renewal applications discloses the fact that very few full time stations sign on as early as 4:00 A.M., and that most of them sign on at 5:30 A.M. or later.

61308 O—60——3

15. DBA notes that not all of the signatory nations contacted by the State Department voiced strong opposition to the DBA proposal. 8/ As we mentioned in the Report and Order, however, Canada voiced strong opposition to the proposal, and Mexico stated that it involves very difficult problems and indicated that no approval of the proposal would be forthcoming in the near future. 433 of the 451 U. S. daytime stations on foreign clear channels are operating on Canadian and Mexican clear channels. 9/

The Alternative Request for Operation from 6:00 a.m. to 6:00 p.m.

16. As mentioned above, DBA's Petition for Reconsideration requests, as an alternative to reconsideration and grant of its request for minimum hours from 5:00 a.m. until 7:00 p.m., that the Commission change its rules to permit daytime stations to operate from 6:00 a.m., or local sunrise (whichever is earlier) to 6:00 p.m., or local sunset (whichever is later). DBA notes that such a request was advanced as an alternative by a party filing comments in this proceeding in support of DBA's Petition for Rule Making; it was not, however, proposed by DBA until after the time of submission of the instant Petition for Reconsideration.

17. Without deciding the question of whether, as a matter of proper procedure, we can consider DBA's alternative request now presented for the first time, we believe that it is not appropriate for us to pass upon it in the form presented by the petitioner. While it is true that such an alternative proposal was advanced by at least one of the parties filing comments in the proceeding, it was not the subject of comments by

---

8/ Petitioner has requested that the correspondence described in paragraph 43 of the Report and Order between the U. S. State Department and the governmental representatives of other countries in the North American region be made public. In order to conform to accepted international practice, the concurrence of other countries would be required before this correspondence could be made available to the general public.

9/ In its petition for reconsideration DBA asserts that past and proposed international agreements do not prohibit operation by U. S. daytime stations on regional channels at times other than sunrise to sunset. This is incorrect. As we emphasized in our Report and Order (paragraph 42), such operation by many regional stations would violate the standards of protection set forth in these agreements with respect to regional channels. As we further stated in our decision (paragraph 43), the Dominion of Canada strongly opposes the proposal because of its effect upon the service of all classes of stations.

most of the proponents, and except to the extent that oppositions to any non-daytime operations were submitted, none of those opposing the original DBA petition directed its attention to it. Therefore, the Commission does not have available to it adequate information and believes that all interested parties should be afforded an opportunity to comment thereon before any final disposition is made of "6 to 6" proposal.

18. Accordingly, the DBA alternative "6 to 6" proposal must be dismissed at this time. However, we believe that further inquiry with respect thereto is warranted. Much additional information on the "6 to 6" proposal may thereby be obtained, particularly with respect to such questions as the extent of area and population which would gain new service, the extent of interference which would result to existing stations, the need for such service, the presence or absence of international complications, and the effect of the proposal upon full time stations operating with different daytime and nighttime facilities. We are therefore promulgating, simultaneously with the issuance of this decision, a Notice of Inquiry on the "6 to 6" proposal.

CONCLUSION

19. In our Report and Order adopted September 19, 1958, we concluded that amendment of the Rules as proposed by DBA would not serve the public interest. We have carefully considered the Petition for Reconsideration thereof and the other pleadings which have been filed pursuant thereto. We conclude in the light of the foregoing considerations and the entire record in this proceeding that the Petition for Reconsideration, insofar as it requests favorable action on the proposal to permit daytime stations to operate minimum hours from 5:00 a.m. to 7:00 p.m. should be denied, and that the alternative proposal with respect to "6 to 6" operation should be dismissed.

20. In view of the foregoing, IT IS ORDERED, That the above-described Petition for Reconsideration, filed October 20, 1958, by Daytime Broadcasters Association, Inc., insofar as it requests reconsideration and grant of the earlier DBA proposal to permit daytime stations to operate from 5:00 a.m., or local sunrise (whichever is earlier) to 7:00 p.m., or local sunset (whichever is later), IS DENIED; and IT IS FURTHER ORDERED, That, insofar as the above-described Petition for Reconsideration requests, as an alternative proposal, that daytime stations be permitted to operate from 6:00 a.m. or local sunrise (whichever is earlier) to 6:00 p.m., or local sunset, (whichever is later), the said Petition IS DISMISSED.

FEDERAL COMMUNICATIONS COMMISSION

Mary Jane Morris
Secretary

Attachments

Adopted: January 7, 1959

Released: January 12, 1959

ATTACHMENT
DOCKET NO. 12274

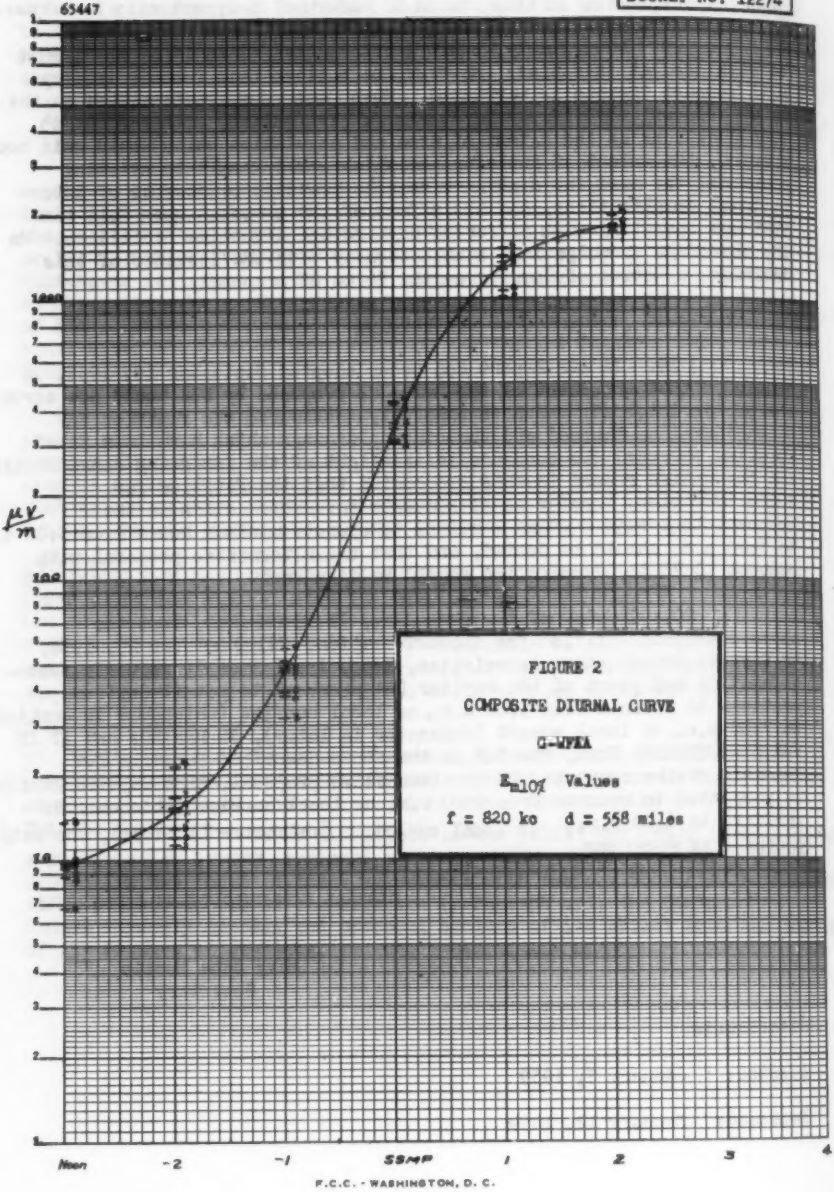


FIGURE 2

COMPOSITE DIURNAL CURVE

C-MVEA

$E_{m10\%}$ Values

f = 820 kc d = 558 miles

ATTACHMENT Page 2
DOCKET NO. 12274

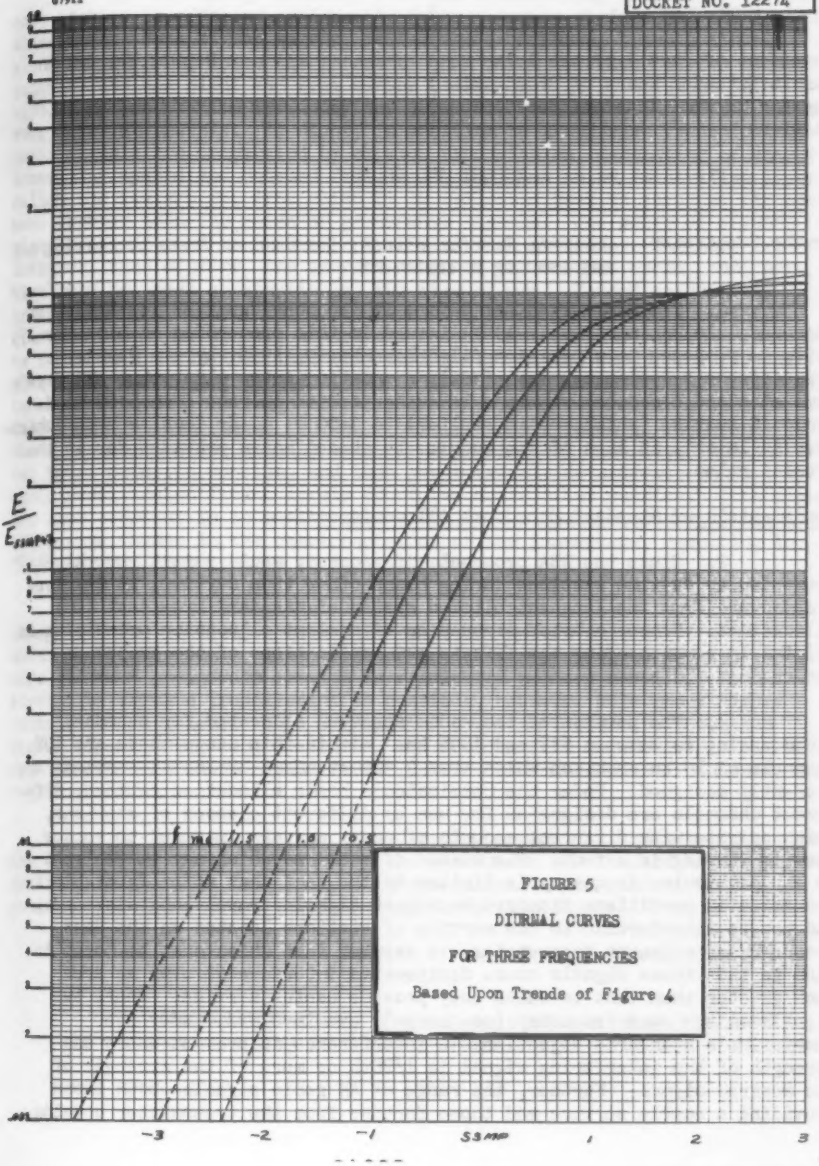


FIGURE 5

DIURNAL CURVES

FOR THREE FREQUENCIES

Based Upon Trends of Figure 4

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington 25, D. C.

B
FCC 58-891
62895

In the Matter of)
)
Amendment of Part 3 of the Rules to) Docket No. 12274
Permit Extended Hours of Broadcast-)
ing for Daytime Standard Broadcast)
Stations)

REPORT AND ORDER

By the Commission: Chairman Doerfer absent; Commission Cross concurring and issuing a statement.

1. The Commission has before it for consideration its Notice of Proposed Rule Making (FCC 57-1387) issued in this proceeding on December 19, 1957, in response to a petition filed December 9, 1955, by the Daytime Broadcasters Association, Inc. (DBA), requesting inter alia, that all daytime standard broadcast stations be authorized to operate from 5:00 A. M. or local sunrise (whichever is earlier) to 7:00 P. M. or local sunset (whichever is later), in lieu of the sunrise to sunset hours provided for in the present rules.

Fundamentals of Standard Broadcast Allocations:

2. Since the DBA proposal, if adopted, would permit general operation by daytime stations during hours other than daytime, it involves a departure from the long-established system of standard broadcast (AM) allocations. Hence, a brief discussion of present allocation principles is helpful in comprehending the effects and implications of the proposed action.

3. The portion of the radio spectrum allocated for standard broadcasting is between 535 and 1605 kc. Within this range there are 107 channels of 10 kc each, on which over 3,300 standard broadcast stations are presently assigned. Under the Commission's basic allocation pattern, different channels are designated for use by different classes of stations, which operate with different amounts of power and are intended to render service varying in extent. The number of stations which may be assigned to any particular frequency is limited by the fact that under favorable transmission conditions standard broadcast signals travel long distances, and create interference to the service of stations located on the same frequency or adjacent frequencies. A salient fact which must be borne in mind is that these signals cause destructive interference over an area much greater than that to which they provide useful service. Where two signals on the same frequency (co-channel) are involved, under the Commission's standards objectionable interference is present where the strength of the interfering signal is 1/20th or more of the strength of the desired signal. Further, the range of AM radio signals—both those providing a usable service and those farther from the transmitter causing

destructive interference—varies considerably as between the daytime and nighttime hours, because of the characteristics of skywave propagation.

4. The energy radiated from the transmitting antenna of a broadcast station is affected differently by the earth's surface and the upper atmosphere. Part of the energy, called the groundwave, travels closely along the surface, where its intensity in a given location remains almost constant day and night and from season to season. It is affected principally by the station frequency and power, and the character of the terrain over which it travels. At night, in addition to groundwave transmission, radio signals are propagated by skywave transmission, consisting of energy travelling upward and outward from the transmitter to an electrified layer called the ionosphere, from which it is reflected back to earth at distances much greater than the reach of groundwave signals. The range of skywave signals is affected by many more variables than groundwave signals, including latitude, time of year, the current stage of the sunspot cycle, and, particularly and most substantially, the time of day. Caused principally by the sun's radiation, the ionization of the upper atmosphere exhibits diurnal variations of such nature and extent that skywave signals, returned to earth with negligible intensity during most of the day, are reflected with great efficiency at night, where with varying intensity they reach distances far beyond the range of the groundwave. Skywave signals begin a measurable buildup about two hours before sunset, reach quasi-maximum values about two hours after sunset, maintain approximately that level until about two hours prior to sunrise, and then progressively deteriorate until they again reach insignificant levels about two hours after sunrise. Such signals are less constant in intensity than groundwave signals, because of the continuous change in the characteristics of the ionosphere, resulting in "fading" from time to time in skywave reception.

5. Skywave signals render a useful service over wide areas, although because of their somewhat intermittent nature such service is, under the Commission's rules, considered secondary service, whereas the more constant groundwave service is considered primary service. Such service by skywave transmission is possible, however, only under highly restricted conditions. Both transmitter power sufficient to propagate usable signals over long distances, and freedom from objectionable electrical interference which might prevent service of an acceptable standard, are required.

6. With the aforementioned radio propagation characteristics in mind, rules were adopted governing the assignment of standard broadcast stations to specific frequencies. These rules seek to achieve to the greatest possible extent the following three objectives:

(a) To provide some service of satisfactory signal strength to all areas in the nation;

(b) To provide as many program choices to as many listeners as possible;

(c) To provide locally originated service to as many communities as possible.

7. The effective implementation of these three objectives produces inevitable conflict. Maximum area coverage can be obtained by using a single station or a very few high-powered stations on a given channel. On the other hand, the assignment of numerous stations on a channel to provide local outlets for as many communities as possible can only be accomplished by severely restricting station coverage to small areas ringed by interference from the numerous other stations on the channel. Similar conflicts affect the maximum attainment of objective (b). In view of the aforementioned marked differences between daytime and nighttime propagation of AM radio signals, the conflicts in implementing the three basic objectives are much greater during nighttime than during daytime. It is not engineeringly feasible to cover the entire United States with interference-free groundwave (primary) signals at night. It is generally agreed that approximately half of the land area of the United States and some 20,000,000 persons must depend on skywave (secondary) signals for nighttime radio service.

8. The impossibility of simultaneously implementing all three of the above-listed objectives on any single channel led to the classification of broadcast frequencies into separate groups, with different rules for the assignment of stations, depending upon the purpose for which each class of channels was established: (a) clear channel frequencies designed to provide primary (groundwave) and secondary (skywave) service over an extended area and at relatively long distances by high-powered stations known as Class I stations; (b) regional frequencies designed for stations (known as Class III stations) to render service primarily to metropolitan districts and the rural areas contiguous thereto; and (c) local frequencies designed for stations (known as Class IV stations) to render service primarily to cities and/or towns and the suburban and rural areas contiguous thereto. This pattern of allocation dates from the adoption of the Commission's Rules and Standards, essentially in their present form as far as standard broadcasting is concerned, in 1939. Because of the relative inefficiency of skywave transmission during daylight hours, it is possible to assign many more stations to a given channel for daytime operation. Moreover, the assignment of daytime stations permits more efficient channel utility than would otherwise result. It has therefore been possible, and in furtherance of the basic objective of providing as much service and as many local broadcast outlets as possible, for the Commission to assign additional stations on the clear and regional channels in various parts of the country limited to operation during the daytime hours, as well as to permit unlimited time stations to operate with increased facilities during these hours. There are now about 1400 daytime stations, 1/ of which

---

1/ The term "daytime station" as used herein includes approximately 15 stations which are licensed on clear channels as "limited time" stations. The only difference between the two groups is that where a limited time station is located east of the dominant station on the same frequency it may operate until sunset at the dominant station, while daytime stations may operate only until local sunset.

about 850 are assigned to regional channels and all but one of the remaining 550 to clear channels.

9. From the foregoing, it is apparent that the authorization of daytime stations was specifically intended to permit the utilization of spectrum space which, after accommodating other stations (i. e., clear channel and full-time regional stations), was available during the day but not at night. By long-standing domestic usage and international agreement the hours for daytime broadcasts are those between sunrise and sunset. The subject DBA proposal would permit daytime stations to operate during the nighttime (post-sunset and pre-sunrise) period during several months of the year.

Relation between Instant Proceeding and Clear Channel (Docket No. 6741) and Daytime Skywave (Docket No. 8333) Rule Making Proceedings

10. A grant of the instant DBA proposal would have a direct bearing upon two current rule-making proceedings. As stated in Paragraph 4, above, the appearance and disappearance of skywave transmission is not, as our present allocation rules might imply, an instantaneous phenomenon commencing precisely at sunset and ending precisely at sunrise. Data which have been accumulated from field intensity recordings of numerous stations have shown that skywave transmission, which is negligible during most of the day, builds up progressively in a significant degree at about two hours before sunset and reaches its approximate maximum at about two hours after sunset. 2/ Likewise, nighttime skywave transmission, which begins to deteriorate progressively about two hours before sunrise, is present to a limited degree as long as two hours after sunrise. As a result, operation of daytime stations even within the period between sunrise and sunset causes progressively diminishing or increasing skywave interference to stations sharing the use of the channel and, to some extent, adjacent channel stations. This interference is sufficiently severe to impinge substantially on the service areas of stations which under the Commission's present allocation rules are entitled to protection from objectionable interference over the wide areas that they are intended to serve.

11. In 1947 the Commission initiated a rule-making proceeding (Docket No. 8333) to determine the existence, nature and extent of daytime skywave transmission of standard broadcast signals and to ascertain what, if any, changes should be made in the rules as a result of its findings. In March, 1954, the Commission issued a proposed Report and Order in that

---

2/ The order of magnitude of the increase is indicated by data in Docket No. 8333. As an example, on a frequency in the middle of the standard broadcast band, a signal will increase roughly forty times in intensity from 2 hours before sunset to sunset and will reach approximately 150 times the two-hour-before-sunset intensity at two hours after sunset. The variation between pre-sunset and post-sunset signal intensity is more pronounced at lower frequencies and less pronounced at higher frequencies.

proceeding (10 Pike and Fischer RR 1541), embodying amendments to the rules and technical standards which would restrict the daytime skywave radiation of interfering stations toward desired Class I stations to a specifically prescribed degree. This could be achieved by reducing power, directionalizing interference signals away from the desired station, or both. While affording some degree of protection from daytime skywave interference, the proposed amendments reflect a compromise in that the restrictions were not so limited as to afford the co-channel Class I stations the full degree of protection which was sought by those stations. In July, 1954, the Commission held oral argument on the proposed rules, and subsequently received written comments concerning whether the proposed restrictions should be confined to new or changed station assignments or should be applied also to existing stations. The Commission has not yet reached a final conclusion in that proceeding.

12. The Daytime Skywave proceeding (Docket No. 8333) in turn is intimately related to far broader issues concerning even more basic questions of revision of the standard broadcast allocations pattern which are under review in the Clear Channel proceeding (Docket No. 6741). 3/ Under the present allocation, a total of 46 frequencies are assigned as U.S. Clear Channels. 24 of these clear channels are reserved for the exclusive use at night of a single Class I-A station. On the remaining 22 U. S. clear channels more than one Class I-B dominant station may be assigned, such stations affording each other mutual protection through the use of directional antennas. The assignment of secondary or Class II stations is permitted on all of the clear channels. On the clear channels assigned for Class I-A use, only daytime Class II stations are permitted; whereas on clear channels assigned for Class I-B use, unlimited time Class II stations affording day and night protection to the dominant Class I-B stations are permitted. On April 15, 1958, the Commission issued a Further Notice of Proposed Rule Making in Docket No. 6741, inviting comments on a proposal to assign additional unlimited time stations on 12 of the 24 U. S. Class I-A clear channels in order to improve service in certain areas. On five of these 12 channels new Class I-B station assignments would be permitted in specified Western states with directional antennas to protect both new and existing Class I stations. The proposal also contemplates that Class II (secondary) stations could also use these channels at night under certain conditions. It further provides that on the other seven of the twelve Class I-A clear channels mentioned, additional Class II stations would be authorized in locations where they would provide needed primary service in areas now lacking it. While no action was taken with respect to the other 12 Class I-A clear channels, the Commission asserted that it will consider at a later date the advisability of authorizing the use of higher power on these channels. Comments in response to the April 15 Further Notice were filed on and before August 15, 1958, and reply comments are due by September 29, 1958.

3/ Docket Nos. 6741 and 8333 were consolidated in 1947 but in 1953 were severed in order to permit separate consideration of the daytime skywave proceeding (Docket No. 8333).

13. It is evident that the entire clear channel problem embraces the daytime skywave problem as one large facet, and that the latter in turn affects the basis on which it would be possible to approach the questions raised by the instant DBA proposal for extended hours of daytime stations. The DBA proposal contemplates an action diametrically opposed to the tentative conclusions announced by the Commission in its March 1954 proposed Report and Order in Docket No. 8333. Thus, insofar as the instant proposal concerns daytime stations on clear channels, it could not be granted in whole or in part without having a direct bearing upon the aforementioned clear channel and daytime skywave proceedings, and involving a prejudgment of the issues therein. Denial of the instant proposal, of course, would not involve such prejudgment. 4/

Record In This Proceeding

14. Comments favoring the proposal were filed by the Daytime Broadcasters Association (DBA), an organization representing about 150 daytime stations, and by the licensees of over 100 daytime broadcasting stations. Oppositions were filed by the Clear Channel Broadcasting Service (an association representing 14 non-network-owned Class I-A stations), the National Grange, and by the licensees of over 240 clear channel and full-time regional stations. A large volume of correspondence from individuals and groups favoring the proposal, and a smaller quantity of informal communications opposing it, were received.

15. The proposed extended hours of operation prior to local sunrise and after local sunset by daytime only stations would automatically involve extended hours of interference to full-time stations operating on the same frequencies. 5/ Thus, the ultimate question in this proceeding — apart from international considerations — is whether or not the public interest would be better served by permitting all daytime stations wishing to do so to broadcast during these extended hours, despite resultant interference to unlimited time stations, or whether the public interest would be better served by retaining the present rules prohibiting the operation of daytime stations during nighttime hours. In our Notice we stated that, in order to resolve this question and to evaluate adequately DBA's proposal, we needed reliable information on which to make a reasonable assessment of the probable resultant losses of service as well as a showing of the extent of the service gains which could be achieved through its

---

4/ On August 15, 1958, WCAR, Inc., licensee of Station WCAR, Detroit, Michigan, filed a petition requesting that the Commission consolidate the instant proceeding with the clear channel and the daytime skywave proceeding (Docket Nos. 6741 and 8333). Other parties in their comments in this proceeding also requested consolidation. For the reasons set forth in this Report, and in view of our action herein, to the extent that these requests ask consolidation of Dockets 6741 and 8333 with the instant proceeding, they are denied.

5/ None of the formal comments filed in this proceeding challenged this assertion.

adoption. Accordingly, we requested reasonably complete and accurate data concerning:

(a) The times during which, the areas in which and the populations for whom the DBA proposal would result in added primary service.

(b) The extent to which such primary service gains would occur where no other primary service is available;

(1) from any other station.
(2) from any other station located in the same city or town.

(c) The periods during which, the areas in which, and the populations for whom primary service available under the present rules would be subjected to objectionable interference to the signals of U. S. Class I-A, I-B, unlimited time Class II and Class III stations.

(d) The extent to which the foregoing losses of service would occur in areas and for populations receiving no other primary service.

(e) A showing similar to (c) and (d) with respect to losses of skywave service within the .5 mv/m 50% skywave contours of Class I stations.

(f) The extent to which limitations set out in the above-referenced international agreements would be infringed.

(g) Views of the parties concerning the need for the additional services which would be made possible by extending the hours of operation of daytime stations and the effect on the public interest of the consequent losses of service from other classes of stations.

16. The comments of DBA and the other proponents, while containing some material as to hours of operation and the communities in which daytime stations are the only local radio outlets, supply no data on areas and populations which would gain or lose service by adoption of the proposal. They urge that such data is of little use because service from distant high-power stations is not of value to local communities, even if available, because the programming of such stations is not designed for or of interest to the populations of distant communities. This argument, aimed primarily at clear channel rather than regional stations, is considered below. The opponents assert that there is great need for any data which may shed light on the probable or possible effects of the DBA proposal in terms of services to be gained or lost by the public. Many of the opponents have filed engineering statements setting forth the results of studies concerning the nature of the proposal. While most of these statements are admittedly

not as comprehensive in scope and detail as the Commission's Notice called for, the opponents express the view that they are nonetheless adequate to establish, for the frequencies and locations which have been studied, that severe losses in area and population now receiving interference-free night-time primary groundwave service and secondary skywave service would result from operation of daytime-only stations beyond local sunset hours and, likewise, that interference effects suffered by daytime-only stations after local sunset would markedly reduce any gain in service by those stations.

17. Much of the data which has been filed is tabulated in summary form in the appendices attached hereto. While our consideration is by no means limited to data therein, these appendices serve as a convenient vehicle and ready reference for a substantial quantity of the technical data which has been filed in this proceeding.

18. Appendix I shows the areas and populations served by daytime stations and the service which would be afforded if these stations were authorized to operate at night after local sunset or before local sunrise. Appendix II shows the areas and populations receiving primary service nighttime from stations authorized for nighttime operation and the areas and populations which would lose this service as a result of interference under the DBA proposal. Appendix III shows the areas and populations receiving nighttime secondary service and the areas and populations which would lose this service under the DBA proposal.

19. Interference computations were made using the average skywave field intensity charts contained in Section 3.190 of the Commission's Rules, which are based on the average field intensity corresponding to the second hour after sunset. In addition, the diurnal variation curves contained in Figure 5 of the Commission's Exhibit 1 in Docket No. 8333 were used by some parties on the basis that these curves are more appropriate for the first hour after sunser or before sunrise. Where data was supplied on both bases, the appendices show both values. We believe these field intensity charts and diurnal variation curves and the various other engineering tools and assumptions -- based upon professional engineering experience -- are sufficiently valid to render the data submitted by these parties of practical use to the Commission in reaching our decision herein.

We proceed to consider the seven propositions set out above.

(a) The times during which, the areas in which, and the populations for whom the DBA proposal would result in added primary service.

20. The stations licensed for daytime operation only for which data has been filed are listed in Appendix I. Although in some instances not complete, data requested by the Notice herein has been filed for 81 stations. Sunrise and sunset hours for the months of March and December are shown in the Appendix for each station. Thus the hours of operation requested by the petition may be determined for each station by comparing the sunrise and sunset time shown in the Table with the 5 A. M. to 7 P. M. hours requested by the petition. For example, sunrise and sunset at

Texas City, Texas in March is 6:30 A.M. and 6:30 P.M.; in December it is 7:00 A.M. and 5:15 P.M. When compared with 5:00 A.M. to 7:00 P.M., the early morning operation involved amounts to 1½ hours and evening operation for 1/2 hour during March and 2 hours and 1 3/4 hours, respectively, during December.

21. The month of March has been chosen as representative of spring and fall (October) conditions and December as representative of the conditions during the winter. In general, during summer 5 A.M. follows sunrise and 7 P.M. precedes local sunset. Thus, sunrise and sunset hours for June, as representative of summer, are not shown.

22. Disregarding the summer season, during which slight if any additional operation is involved, the additional morning hours of operation from the table range from a minimum of 1 hour during March to a maximum of 3 1/4 hours during December, with an average of 1.5 hours during March and 2.4 hours during December.

23. Since the stations licensed for daytime operation only do not now operate after local sunset or before local sunrise, any primary service which would be provided by such stations during the extended hours requested by the petition would result in added primary service. The data tabulated in Appendix I shows that 7,977,444 persons within 36,800 square miles would receive primary service from 50 stations on which sufficiently complete data has been supplied, based upon the interference conditions during the second hour after sunset. By way of comparison, 44,567,568 persons within 540,223 square miles receive service from these same stations during their daytime operation. Thus, these stations would, in the aggregate, afford service during the additional hours requested to 17.9% of the population and 6.8% of the area that they serve during daytime hours. For conditions during the first hour following sunset or before sunrise (two hours of the total additional operating hours requested in the petition are under first hour conditions) the data shows that 8,421,166 persons within 20,285 square miles would receive primary service from the 24 stations for which first hour data is available. During these hours the daytime stations would serve in the aggregate 31.1% of the population of 27,100,159 and 6.1% of the area of 334,484 square miles served by the same stations during daytime hours.

(b) The extent to which such primary service gains would occur where no other primary service is available:

(1) from any other station
(2) from any other station located in the same city or town.

24. Based on data for the entire 81 stations listed in Appendix I, of the total area and population which would receive added primary service only 64,151 persons in approximately 330 square miles do not now receive primary service from any other station during nighttime hours. 1,541,153 persons in 28 communities do not receive nighttime primary service

from any other station located in the same city or town in which the daytime station is located, although other nighttime primary service is available. 6/

25. The above population, area, and percentage figures are limited to the stations for which coverage data has been submitted in this proceeding. These stations comprise a minor percentage of the stations licensed for daytime operation. It is thus appropriate to consider carefully the question whether such data is adequate for our use herein. Upon careful consideration it is our view that the data is typical of all daytime stations and is thus fully adequate. The electrical interferences to the signals of the various stations, which limit their coverage, extend over great distances at night, and thus affect those stations for which no data has been filed as well as those for which data has been filed. The extent of the interference on each channel for which data was filed will be greatly increased under the operation proposed by DBA as compared to the interference now existing. Such interference will prove to be at least as severe as additional stations are considered in the data. Finally, our examination extends to daytime and unlimited time station coverages under the data which has been filed. Thus, a substantial number of stations are included, and on these our most careful evaluation convinces us that the daytime stations for which data has been filed are in no way atypical but are fully representative of all daytime stations, both those now licensed and those which may be granted in the future. While additional data could serve to provide greater detail to buttress our decision herein, and to that extent would be desirable, no additional data is necessary in order to support our conclusion herein.

26. One additional and somewhat countervailing factor is appropriate for consideration here. There are listed in Appendix IV all of the cities and towns within nighttime "white areas" (i. e., areas receiving no nighttime primary service) in which daytime stations now operate. The proposed nighttime operations would afford immediate primary service to these communities to the extent that such service would not be prevented by electrical interference. It is reasonable to assume, moreover, that in most instances centrally located transmitter sites could be found which would provide service to all persons in these cities and towns.

(c) The periods during which, the areas in which, and the populations for whom primary service available under the present rules would be subjected to objectionable interference to the signals of U.S. Class I-A, I-B, unlimited time Class II and Class III stations.

27. The unlimited time stations for which primary service data has been filed are listed in Appendix II. This data, although incomplete for some stations, has been filed for 169 stations.

6/ In several instances such primary service is received from the principal city of the urbanized area in which the community is located. In this connection see footnote 16 on page 20.

28. The loss in the service of 132 stations based on second hour conditions aggregates a total of 94,591,111 persons in areas totalling 1,289,827 square miles. The loss of service amounts to 43.7% of the populations and 68.6% of the areas now served at night by these stations. 6a/

29. Based on first hour conditions, the interference shown in the Appendix for 24 stations for which such data is available totals 27,513,881 persons in 646,989 square miles. The loss amounts to 30.8% of the population and 53.9% of the area now served by these stations during these hours.

30. Sunrise and sunset hours are not shown in Appendix II because those appearing in Appendix I are considered to be more meaningful. It is from these that the extended hours of operation by daytime stations, and thus the duration of interference causing the loss of service of unlimited time stations, can be determined. Moreover, the periods during which interference would be encountered would not prove appreciably different if computed upon the basis of sunrise and sunset hours at the slightly different locations represented in Appendix II, these being generally similar in geographical latitude and longitude.

(d) The extent to which the foregoing losses of service would occur in areas and for populations receiving no other primary service.

31. No data has been tabulated in the appendices showing the other primary services in the area which would lose service if the DBA proposal is adopted, since very little data on this point was submitted in this proceeding. In any event the significance of such data, if it had been tendered, would have been minimal because of the reduction in primary service by substantially all unlimited time stations which would result from adoption of the subject proposal. It is evident from Appendix II that all of the unlimited-time stations on frequencies on which daytime stations are or may be licensed will lose service. The effect of these losses cannot be considered by measuring the loss of service of any one station but must be considered when all of the service losses are combined. While data has been supplied in various comments showing that substantial "white" areas would be created by loss of service from an existing station, a summation thereof has not been feasible at this time in view of the incompleteness of the data submitted. We are certain, however, that very considerable "white" area would result if the proposal were adopted.

(e) A showing similar to (c) and (d) with respect to losses of skywave service within the .5 mv/m 50% skywave contours of Class I stations.

32. Secondary service is provided to those areas in which a skywave signal has sufficient strength to render satisfactory service and is free from interference from other stations. Under our rules only Class I

6a/ The present service areas that would be lost by a number of these 132 stations overlap. Thus, while many persons would lose two or more services, the total population and areas which would lose one or more services is considerably less than the aggregate totals of 94,591,111 persons, and 1,289,827 square miles.

stations provide secondary service. Such service is considered to begin at sunset and end at sunrise the following day, coincident with the required sign-off and sign-on, respectively, of the stations licensed to operate on the same channel during the daytime hours. 1/ The full coverage potential of secondary service is not realized during the first hour following sunset (or before sunrise), however, as the 50%-time skywave service signals increase in strength in accordance with the diurnal curve. The increase in strength and thus in service potential of these signals does not depart significantly from the increase in strength of the interfering signals governed by the same diurnal effects. The exact amount of skywave service destroyed under the DBA proposal will thus vary from day-to-day and from time-to-time in any given day because the time in which the interference occurs includes the time during which the skywave service is in the process of increasing or of decreasing. We conclude, however, that all or substantially all such service would be subjected to objectionable interference under the proposal during all nighttime hours that daytime stations would operate, particularly in view of the large number of pending applications that request operation during these hours.

33. DBA and other proponents assert that nighttime skywave signals from the clear channel stations are too weak, intermittent and undependable to provide service throughout large areas of the USA. These proponents urge adoption of the DBA proposal as a remedy for this asserted lack of service. However, after carefully studying the technical data submitted in comments in this proceeding, in addition to other engineering information in the Commission's files, we are of the view that the "cure" would be worse than the "sickness," if any. The DBA plan would deprive vast populations of all secondary service without providing any replacement for most of the areas concerned. A multiplicity of skywave service is necessary for adequate secondary service due to the intermittent character of skywave transmission. The destructive effect of the proposal is only very slightly mitigated by the fact that on a few of the clear channels (such as 670 kc, 720 kc and 1200 kc) there would be no co-channel interference at the present time because there are no daytime-only stations assigned on these frequencies. As a specific example of the effect of the destruction of secondary service, it might be noted that in Idaho and Montana there is an area of about 7,000 square miles, containing about 10,000 persons, to which there is available no primary service and only two secondary services during non-daytime hours. Both of these secondary services would be completely destroyed during certain hours under the proposal, leaving this area and population with no radio service whatsoever.

1/ The exact build-up of skywave service depends both upon the increasing strength of skywave signals and the elimination of interfering signals. Sunset time for two or more daytime stations may be somewhat different for each location. Thus, a reduction of interference will be realized as each leaves the air, until the interference is entirely eliminated. During morning hours an inverse sequence is followed, each daytime station commencing operation at its own local sunrise.

34. Although not in its original petition for rule making, DBA in its comments suggests that the Commission permit full-time stations operating with different facilities day and night to operate with their daytime facilities during the same extended hours that daytime stations are permitted to operate. Such an additional change in allocation policy would of course increase by a considerable amount the interference which would prevail during non-daytime hours. Some opponents of the proposal in their engineering analyses have assumed that a grant of extended hours for daytime stations would entail a grant of the same extended hours of operation by full-time stations with their daytime facilities, and have made part of their engineering showings on that basis. In view of our disposition of the DBA proposal in this Report, we need not decide whether granting the DBA request for extended hours of operation by daytime stations would or would not necessarily require authorization of extended hours of operation by full-time stations with their daytime facilities. Our evaluation of the DBA proposal is based upon the conditions which would prevail if daytime stations operated during extended hours and full-time stations operated as they presently do with daytime facilities during daytime hours and night-time facilities during all other hours. 8/

Conclusions Based upon Technical Data Submitted

35. The tabulation (Appendices I, II, and III) of the data secured in response to the various engineering matters listed in the December 19, 1957, Notice demonstrates conclusively that, in view of the tremendous losses which would result to the existing radio service throughout the U.S. from the operations contemplated by the instant proposal as compared with the much smaller amount of new service which would be provided in some locations, the proposal fails to accord with the statutory standards governing radio broadcast services 9/ and the objectives set forth in paragraph 6, above.

Explanation of Tables

36. While substantially all of the technical data which has been filed in this proceeding is tabulated in the appendices, it has not been

---

8/ It might be argued that if daytime-only stations are allowed to operate during extended hours, as a matter of equity full-time stations should be allowed to operate during the same hours with their daytime facilities. On the other hand, it could also be contended that since the essence of the daytime stations' argument is service to local communities, and since by definition under the Commission's rules full-time stations adequately serve their communities with their nighttime facilities, there is not present the element of need necessary to support such a change in the rules in the case of full-time stations. In any event, it is obvious that such an additional change in the rules would materially worsen interference conditions during the non-daytime hours beyond that which would occur from a grant of the proposal as to daytime stations; and, since there is no showing of such a need, the public interest would clearly not be better served by a grant of the proposal for both types of operations than by grant of the proposal for daytime stations only.

9/ See Sections 1 and 307 (b) of the Communications Act of 1934, as amended. Section 1 requires that the Commission "make available, so far as possible, to all the people of the United States . . . a radio communication service."

possible to include some data. In a few instances, for example, data is not included in which only partial or fragmentary data was supplied or where the data supplied was based solely upon potential or hypothetical stations in which one or more additional stations were presumed to be licensed and operating. We do not believe that the data so filed is sufficiently consistent with the other data, and sufficiently non-speculative, to warrant inclusion in the appendices. We also note that the data in the Table is not based precisely upon the same conditions in each instance. However, such slightly disparate nature does not detract significantly from its usefulness in this proceeding. 10/ Finally, we observe that the data is based upon the operation of stations now licensed for daytime operation without including any additional stations which may be licensed and without reference to the applications for new daytime stations which are now pending before the Commission. Likewise, possible nighttime operation of unlimited-time stations by using licensed daytime facilities is not reflected in the data.

Other Contentions of Proponents Re Commission's Engineering Standards

37. The DBA and other proponents have contended that the Commission's engineering standards contained in the present broadcast rules are not wholly applicable for various reasons to the nighttime operation following sunset and before sunrise envisaged by the petition. It is contended that the Commission's skywave curves (Figures 1 and 2 of Section 3.190 of the Rules) should not be used in measuring post-sunset interference conditions in the first two hours after local sunset and prior to local sunrise since these curves represent propagation conditions corresponding to the second hour after sunset, conditions which do not apply to the hours involved here. The term "twilight hours" is suggested by DBA to serve as a virtual substitute for the use of sunrise and sunset times in the Commission rules. DBA has supplied a table of sunrise, sunset and astronomical twilight times for nine cities distributed throughout the Central Time Zone. The proponents contend further with reference to Figures 1 and 2 of Rule 3.190 that "The data in these curves was derived on the basis of data compiled in the second hour after sunset at the western end of the path" /Emphasis supplied/. From this the proponents argue that for west to east transmissions, the curves become applicable only when the time at the receiving location is somewhat later than two hours past sunset. Before proceeding to further discussion of the curves, it is appropriate to note that we are left with no guidance as to how the proponents' argument

10/ For example, some parties filing comments did not use the 50% exclusion method contained in the Commission's Engineering Standards, contending that such becomes inapplicable in view of the great number of stations which would be involved in the nighttime operations at reduced separations. We believe the effect thereof in reference to the resulting data is de minimis.

proceeds from "data compiled in the second hour after sunset" to the conclusion expressed in terms of "two hours past sunset," for the two are by no means the same. As used in the Commission's Standards and pronouncements, the term "second hour after sunset" means the entire 60 minute period extending from 60 minutes after sunset until 120 minutes after sunset.[11] Figure 1, used for stations operating on clear channels, is based on data corresponding to the second hour after sunset at the recording station (i.e., the receiving location). Accordingly, the curves therein represent not conditions existing at the exact period of sunset plus 120 minutes or sunrise minus 120 minutes, as might be gathered from the proponents' discussion, but instead represent average conditions existing during the second hour following sunset and the second hour before sunrise. In securing the data, automatic recordings were made of the field intensity delivered by 40 transmitting stations at 11 different points in the United States.

11/ A different meaning is carried by the term "SSMP+2" which is used in the abscissa scale of the diurnal curves which appear as Figures 2 and 5 of the Commission's Exhibit 1 in Docket 8333 as discussed hereinbelow. This term is an abbreviation for sunset mid-point (of transmission path) plus two hours, i.e., plus 120 minutes. Any point SS+X on the curves is based on data for the hour centered on X hours after sunset. From a statistical viewpoint any point on the curves represents the best estimate for the hourly median field centered on the abscissa for that point. Based upon the statistical variation of the instantaneous field in intervals of an hour where the sunset interval is centered on true sun time sunset (Report of Committee III in Preparation for the Clear Channel Hearing, Docket 6741, dated January 15, 1946), these figures present abscissa values which are designated on a linear time scale, the minimum division of which represents one-tenth of an hour or exactly six minutes. Lesser time increments may be read from the scale by interpolation. Figures 2 and 5 show, respectively, a plot of the data for Station WFAA as recorded in Grand Island, Nebraska, over a period of approximately six years beginning in 1939, and curves for 0.5, 1.0 and 1.5 megacycles based upon data from fourteen transmission paths recorded during these years. Diurnal curves submitted in the comments herein show slight variations from FCC data but present no conflict of decisional significance to this proceeding. Figure 5 is appropriate for use in the manner set forth in Exhibit 1 of Docket 8333 and in the Report of Committee III in Preparation for the Clear Channel Hearing, Docket 6741, dated January 15, 1946. When so used, it may with substantial validity (Exhibit 1, Docket 8333, page 3, line 12 et. seq.) be applied directly to Figure 2 (formerly Figure 1 a) of Section 3.190, which reflects data on curves also prepared by the above-named Committee III (Exhibit 109, Docket 6741, page 3, line 12 et. seq.). By this procedure, the field intensity may be determined for any hour of transmitter local time following sunset (or before sunrise) within the entire range of abscissa values shown thereon. Its use in similar manner with Figure 1 is also considered to be substantially accurate in view of the significant similarities between Figures 1 and 2. Moreover, any slight inaccuracies which may be reflected by such use are considered to be insignificantly small and thus not significant to our decision herein.

East to west, west to east, and north-south paths were included. The curves of Figure 2 used on regional and local channels are derived on the basis of data covering hourly median fields for 10% of the year at the western end of the path. This data, insofar as reciprocity of transmission east and west may be assumed, may equally well be interpreted as a representation of propagation over the same path to the east from a transmitter located to the west. Development of this fact is made in FCC Exhibit No. 1 of Docket 8333, to which the petitioner has made reference. The exhibit presents "An Analysis of Data Recorded on 14 Transmission Paths for a Period of Approximately Six Years" with the objective "to obtain curves representing '10% skywave field intensities' at any distance, in any direction, at any frequency, at any hour of transmitter local time for a station at any latitude." The diurnal curves, Figures 2 and 5 of the exhibit, contain data concerning the variations of strength of skywave signals following sunset and thus can be used to determine the interference during the first hour after sunset (or before sunrise). It is to be observed that the diurnal curve produced by this analysis yields results of a relatively higher order of accuracy, since it involves only ratio measurements and not the absolute value of any measurement and also that the skywave curves of the Commission are accepted throughout the world as being indicative of average propagation conditions. This data is properly to be used in terms of the sunrise and sunset times used by the Commission in its Rules.[12] Thus, whether or not there be "twilight" following sunset lacks significance in the face of actual measurement data concerning skywave propagation conditions during these hours.

38. These proponents' contention that the Commission's curves should not be applied to determine interference during the first two hours after sunset does not mean that there will be no interference effects in the two hour post-sunset and pre-sunrise periods or that the Commission can proceed on any such invalid assumption. Indeed, DBA and most of the proponents admit that interference will result. Furthermore, it is noted that, although the proponents in discussing interference refer to the two-hour period after sunset and before sunrise as though they were the only periods affected by the proposal, the interference problem is not so confined, since some daytime stations would increase their broadcast hours in the morning and again in the evening to as much as 3½ hours after sunset and before sunrise during midwinter months.

39. The proponents also contend that, since Figures 1 and 2 of Section 3.190 of the rules present a statistical method for predicting interference, such interference would, in fact, exist as little as 10% of the time. This is an over-simplification of the problem, and a misinterpretation of the significance of the 10% figure. Section 3.182 (o) of the Commission's rules states that objectionable interference is created by an undesired signal to a desired signal when the undesired signal exceeds an intensity, determined elsewhere in the rules, for 10% or more of the time. Figures 1 and 2 indicate for a specified radiation intensity and for transmission paths of varying lengths the intensities of the continuously varying skywave signal which are exceeded 10% or more of the time. Therefore, if the intensity of an undesired signal, as determined by the employment of Figure 1 or Figure 2, exceeds the permissible undesired/desired signal ratio, the undesired signal causes objectionable interference, without regard to the fact that it has less than the intensity determined from Figures 1 or 2 for a major portion of the time, and may have completely destructive intensity for a much shorter time. The

---

12/ Section 3.79 of the Commission's Rules.

Commission has selected the 10% level as being a reasonable limit of interference. Ionospheric propagation, the basis of Figures 1 and 2, is a subject of exceeding complexity, the study of which has occupied many capable physicists and engineers over a period of years. While interferences are predicted in standard broadcast station allocations by tools employing the statistical method, we believe that therein lies strength of these tools and that predictions of station interference based upon them are meaningful.

(f) The extent to which limitations set out in International Agreements would be infringed.

40. It is necessary to consider the impact of the DBA proposal on international agreements and understandings affecting allocation of standard broadcast facilities, since these agreements provide stricter limitations upon the operation of unlimited time stations than upon daytime-only stations on almost all frequencies and since they define daytime operation as operation between local sunrise and local sunset. 13/ Almost 400 of the U. S. daytime stations are currently assigned on frequencies on which other North American governments have clear channel stations protected from interference by U. S. co-channel stations. This protection is accorded on the same basis as those countries protect the larger numbers of clear channels on which the United States has priority under the relevant agreements. As to channels designated in the agreements as regional channels, any nation may make use of these frequencies, subject to the conditions as to power and prevention of objectionable interference set forth in the agreements. Any country making an assignment of any facilities on a frequency must notify the other countries involved of the assignment; if another country objects thereto, it becomes the subject of negotiation under the agreements. The agreements involved are the North American Regional Broadcasting Agreement of 1950 (to which the signatory parties are Canada, Cuba, the Dominican Republic, the Bahamas and Jamaica, and the United States of America), and the Agreement between the United States of America and United Mexican States, signed January 29, 1957. Pertinent provisions are found also in the Executive Agreement between the United States and Mexican governments which became effective March 29, 1941, and continues in force until ratification of the successor agreement signed January 29, 1957. In both the 1950 NARBA and the 1957 U.S.-Mexican agreement, definite standards of protection are set up for all of these frequencies, with different standards for day and night (sunset and sunrise) operation. With respect to the Class I-A channels on which the respective countries have priority, the protection extends to the border of the country, and a co-channel signal from a station in another country exceeding 5 uv/m daytime or 25 uv/m nighttime is prohibited. Also contained in the 1950 NARBA, with respect to such channels, is a provision that no station is to be assigned in another country for nighttime operation within 650 miles of the border of the country having priority; the U.S.-Mexican agreement of 1957 states that no nighttime assignments will be made by either country (except in the specific cases mentioned therein) on a channel on which the other country has such priority.

41. While neither the 1957 agreement with the United Mexican states nor the 1950 NARBA has yet entered into formal effect through requisite ratification by the parties, 13a/ the signatory governments, in the interest of avoiding chaotic mutual interference to the several broadcast services concerned are, in general practice, observing the limitations which these

---

13/ The definition of "daytime operations" in the North American Regional Broadcasting Agreement of 1950 (Annex II, Section 1.(6) is quoted in paragraph 18 of the December 19, 1957, Notice initiating this proceeding.

13a/ To date, Canada and Cuba have ratified the North American Regional Broadcasting Agreement.

agreements stipulate. It is not possible, therefore, to disregard these international agreements. The Commission has so stated; in the Note to Section 3.28 of its Rules it is provided that, pending ratification and entry into force of these agreements:

> "...no assignment for a standard broadcast station will be made which would be inconsistent with the terms of these agreements."

This policy has been uniformly applied by the Commission.

42. It is apparent that grant of the instant DBA proposal would violate the standards of protection set forth in these agreements and adhered to by the Commission, not only with respect to clear channels on which other nations have priority of use, but also with respect to regional channels. From the data submitted in this proceeding, it is readily apparent that operation by U.S. regional daytime stations during the nondaytime hours proposed by DBA would cause serious objectionable interference in many cases to stations in foreign countries. One example of interference which would be caused on a clear channel is seen in connection with operation on 740 kc, a channel on which Canada has Class I-A priority and Station CBL, Toronto, operates as a Class I-A station. Under maximum interference conditions which would prevail under the DBA proposal (7:00 p.m. in December), CBL would be limited, as a result of operation by U.S. stations on 740 kc after sunset, to its 11.6 mv/m contour, instead of rendering service out to its 0.5 mv/m contour and beyond. CBL's 0.5 mv/m groundwave contour includes all of southern Ontario between Georgian Bay and the eastern end of Lake Ontario. If limited to its 11.6 mv/m contour the station would render primary groundwave service at 7:00 p.m. in December only within an area with a radius of about 40 miles around its transmitter.

43. After the issuance of the December 19, 1957, Notice in the present proceeding, the Commission requested the Department of State to elicit the views of the other nations which are signatories to the above-mentioned international agreements. The reply which has been received from the Dominion of Canada voices strong opposition to the proposal because of its effect upon the primary service of all classes of stations. Mexico is of the view that the DBA proposal involves very difficult problems and it indicates that no approval of the proposal will be forthcoming in the near future. Of the other signatory countries that have replied, only Bahama, Jamaica, Cuba and the Dominican Republic have indicated that they may not object to the proposal.

44. DBA and other proponents state that since the two agreements have not yet been ratified, the mere fact of their execution and existence is no reason to reject the DBA proposal. But this assertion ignores the fact that, though not ratified, the agreements have been of tremendous importance in affording some measure of protection to United States stations from the uncontrolled interference which could result if the United States, or other countries signatory to the agreements, gave no further consideration to their mutual commitments under such arrangements. We question whether under any circumstances we could appropriately undertake a change in our allocation policies so seriously inconsistent with international understandings, which would jeopardize the framework of mutual protection throughout the continent. We are not impelled to take such a serious step here.

(g) Need for the additional services which would be made possible by extending the hours of operation of daytime stations and the effect on the public interest of the consequent losses of the service of other classes of stations.

45. Under the provisions of Section 3.24 (b)(2) of the Rules, a proposed assignment which will cause objectionable interference to existing service will be permitted only when the public need for the new service clearly outweighs the need for the service which will be lost. This same principle applies in our consideration of the DBA proposal; the public interest will not be served by adopting the proposal unless the need for the service which daytime stations will render during non-daytime hours exceeds the need for the service of unlimited time stations which will be lost during such hours. In making this comparison of the relative need for the service that would be gained and lost by adoption of the proposal, we note that operation of daytime stations as contemplated by the DBA proposal would result in loss of existing service to a vastly greater population that that which would receive additional service. While this finding is a persuasive one, it would not necessarily be determinative if the need for the service which would be gained by a relatively small population were greater than the need for the presently existing service which would be lost. After carefully considering all of the comments filed in the instant proceeding (including letters from community groups and others in support of the DBA proposals, and also those portions of the record of the hearings conducted by the Select Committee on Small Business of the United States Senate in April 1957, which were incorporated by reference in some of the comments herein), we believe that such a preponderant need for the extended hours proposed by DBA is not established, but, rather, that the record shows a greater need for the preservation of service which would be lost under the proposal.

46. The proponents assert that there is a large, unsatisfied need for local service during the hours between 5:00 a.m. and 7:00 p.m. It is asserted that this need is not being met by the service rendered by distant stations because (1) with the increasing availability of closer signals, listeners are no longer content to make use of the weaker signal of a distant station for radio reception; and (2) even if the distant station provides a technically adequate signal, its program service is not geared to the needs and interests of the local community, and does not meet them. Of particular significance, state the proponents, is the fact that in the United States 913 communities, with a total population of more than 7,500,000, have available to them no local radio outlet other than a daytime-only station.[14] It is asserted that extended hours are necessary for daytime stations in order that the needs of these communities and surrounding areas for broadcast service may be more fully met.

[14] Some of the daytime stations supporting the proposal are located not in any of these 913 communities but in cities well supplied with full-time service, including Baltimore, Los Angeles, Pittsburgh, Providence, Akron and Columbus, Ohio, and Greenville, S.C. These stations stress, in support of their request for additional hours, the unique or extraordinarily valuable character of their program service to their communities, including such matters as public-service programming and announcements; the fact that the full-time stations are all network affiliated, whereas the proponents (con't on next page)

47. In evaluating this argument, it must be borne in mind that the absence of a local nighttime standard broadcast station in these communities (the number of 913 has not been challenged, and is accepted here) does not mean that that number of communities are without nighttime primary service. It is established by the data furnished herein that of the 913 communities, approximately 535, with a population of nearly 6,400,000 are located in areas where 0.5 mv/m or better primary service is available nighttime.15/ The rural area around these 535 communities thus receives primary service nighttime; it cannot be determined from the data of record how many of these 535 communities (nearly all of which are of 2,500 population or more) receive by night the 2.0 mv/m signal required for primary service to urban communities, but it appears that most of them do. Many of these 535 communities are located in metropolitan or urbanized areas, and receive primary service from stations located in the principal city thereof or in another surburban community.16/ In other cases, some of these 535 communities receive primary service nighttime from a station located in the same county. We recognize the importance of providing a local outlet for as many communities in the nation as possible. This is one of our basic allocation objectives. Yet this objective should not be reached by changing the AM allocation rules so that an inefficient use of broadcast facilities would result therefrom. The need for and advantages accruing from extended hours for a local outlet are expressed by the proponents as including the following more specific elements (which, it is asserted, are not met by stations located elsewhere):

14/ (con't from previous page) station would furnish an independent, locally-oriented service during the extended hours; foreign-language programming; religious programming; and programming of a higher cultural character than that available in the community from the full-time stations. We conclude herein that the need for additional local service in communities now having no local nighttime outlet does not justify the result sought by DBA; a fortiori, it cannot be concluded that the proposal should be granted because of the programming characteristics of stations in communities having a full-time local outlet such as those mentioned above. Furthermore, such characteristics of programming are of course highly changeable, and therefore are not a valid reason for changing the permanent, basic allocation structure.

15/ The figure of 535 communities is contained in reply comments filed on behalf of Station WING, Dayton, Ohio; it is stated that all of them have "interference-free groundwave service available at night". However, an examination of the exhibits cited in support of this assertion shows that some of the communities listed (e.g., those listed for Alabama) are over 2,500 population and receive only 0.5 mv/m but not 2.0 mv/m groundwave service.

16/ For example, DBA lists among the 913 communities Silver Spring and Wheaton, Maryland, and Alexandria, Fairfax and Falls Church, Virginia, all of which are in the Washington Metropolitan Area. Other suburban communities listed are Glendale and Inglewood (Los Angeles); San Mateo and San Rafael (San Francisco-Oakland); Evanston (Chicago); Covington and Newport, Kentucky (Cincinnati); Bossier City, Louisiana (Shreveport); Dundalk and Towson, Maryland (Baltimore); Cambridge, Bedford and Quincy, Massachusetts (Boston); Inkster (Detroit); Anoka, Hopkins-Edina and St. Louis Park, Minnesota (Minneapolis); St. Charles and Clayton, Missouri (St. Louis); Morristown, New Jersey (Newark); Campbell, Ohio (Youngstown); Massilon, Ohio (Canton); Worthington, Ohio (Columbus); Braddock, Homestead, New Kensington-Tarentum, Pennsylvania (Pittsburgh); (con't next page)

(a) Need for service, particularly during evening and early morning hours during winter months, to convey information about bad weather and other emergency conditions. In wintertime (before sunrise) it would be desirable to have more broadcasting of school closings due to bad weather, changes in school bus routes, etc. On certain occasions daytime stations either could have rendered such service but were unable to do so because of their short hours, or rendered such service (in connection with tornadoes, etc.) in months when they were permitted to operate, but could not have done so if the emergency situation had occurred at another time of year.[17]

(b) Need for service to provide farm market and weather information in the evening and early morning, when farmers are able to hear it and make advantageous use of it (e.g., in connection with deciding whether or not to ship livestock). Wide-area stations, while they can and do provide agricultural information generally, cannot gear such information specifically to the needs of the local farmers in all parts of their wide and diverse areas.

(c) The advantage which would accrue to public-service organizations from the stations having more time to devote to public service programming and announcements. Because of the short operating hours during the months (late fall and winter) when business is good, stations must necessarily devote the bulk of their time to to commercial material; some worthy causes (such as the March of Dimes) put on their drives in wintertime, when the short span of daytime operation limits the effectiveness which a station can have in supporting them.

(d) The general need for and advantage of providing desirable programs, such as news, at times when people are free to listen to them. During daytime hours in late fall, winter and early spring, programs can be presented only during hours when much of the potential audience is at work, in school, or otherwise not free to listen, and that it would be preferable to be able to present such programs during the dinner hours.

16/ (con't from previous page) Prichard, Alabama (Mobile); Scottsdale, Arizona (Phoenix-Mesa); Groton, Connecticut (New London); Coral Gables, Florida (Miami); Decatur, East Point, Georgia (Atlanta); Rossville, Georgia (Chattanooga); New Albany, Indiana (Lousiville); and Council Bluffs, Iowa (Omaha).

17/ One specific example of this kind of service was described by Station WLBH, Mattoon, Illinois. On that occasion, in January 1957, a large local industrial plant was not able to go into operation in the morning because of a break in a gas main (hundreds of miles away) during the night. The plant manager called the station manager about midnight and requested that the

(con't next page)

(e) Elimination of the confusion which results from lack of uniform hours. The audience becomes confused as to when the daytime station signs on and off and during what part of the year a program will be available at a certain time. The audience tends to identify the station with its shortest hours (the only hours during which it is always available); accordingly, it is difficult to build an audience for the additional hours which become available as daytime hours increase seasonally.

(f) The difficulty of building programs at particular hours during the year and then having to cancel or shift them when daytime hours become shorter. Sponsors will buy a particular program at one hour but not at another hour (e.g., a 5:30 news broadcast): this results in gaining a sponsor only to lose him when the program must be cancelled or shifted, and the same thing applies to the listening audience.

(g) Greater service to local advertisers. Local merchants are deprived of theopportunity to promote their products or services by the absence of a radio outlet during non-daytime hours, particularly during the months when business is at a high level (in particular the "pre-Christmas" months, October, November and December). This works to the detriment of the local community in that it gives "big city" advertisers an advantage because they can advertise over full-time stations in the larger communities and appeal to the local community audience, while the local advertisers have no outlet during important listening hours. The small business concern is hurt in this respect, since the local (daytime) station is often the only medium it can afford to use.

(h) The desirability of the hours involved, from the standpoint of the listener, the advertiser and the station (for example, hours up to 7:00 p.m. are valuable because television viewing does not reach its peak until after that hour).

(i) The advantage to the station, from the standpoint of both stability of staff and economy of operation, of being able to conduct its operations during generally the same hours all year, rather than (as at present) having to either support all year a staff adequate for its longest hours of operation, or hire new people for the longer hours every spring or summer.

---

17 (con't from previous page) station broadcast announcements of the event between 6:00 a.m. and 7:00 a.m. so that workers at the plant would not come to work. The station was of course unable to do so since sunrise was not until after 7:00 a.m., and no other station in the area was available to make the announcement.

(j) Advantages to the daytime-only stations, as such. The daytime stations are small business, their opportunities are limited by an archaic allocation system which at present works for the benefit of a few wide-area stations which no longer render a significant service to communities distant from where they are located. While figures may show a fair income for daytime stations as a group, a number of them are not doing well economically and would be hurt in any business recession.

(k) In general, the need for a medium of communication in additional hours, particularly in communities where there is no daily newspaper and where (as in a few cases) the daytime station is the only station in an area of two or more counties.

48. Many of the proponent daytime stations submitted letters from city officials, representatives of civic, educational, religious and business groups, county agents, and similar persons, as well as from listeners, expressing views that some or all of the needs and potential advantages exist. It may be observed, in general, that these persons did not appear to be aware of the fact that during the extended hours the service area of a daytime station would be less than, and often only a small fraction of, the station's daytime service area. Some of them seem to be aware in a general way that the DBA proposal would create interference, but they do not appear to know the extent thereof.

49. We recognize that these needs and advantages of extended hours of operation by daytime stations exist insofar as they concern the public and the community rather than the station itself, and that, absent interference considerations, it would be desirable that a local outlet operate during whatever hours may be necessary to meet them. But these same needs and advantages are common to all radio service and any change in allocation rules which results in degradation of over-all radio service results in less meeting of the various needs and provides for less of the advantages than at present. We recognize the importance and value of permitting the only local outlet in a community to operate during additional hours, especially where, as in the case of some of these daytime stations, the resulting additional service would be the only primary service available during the hours in question. Yet the losses in service which would result, losses often near and in some cases within the very communities which the full-time stations are licensed to serve, far outweigh the gains.[18]

18/ Several opponents of the proposal submitted an engineering study of the effect of the subject proposal on the coverage of a number of 5 kw unlimited time regional stations. The study discloses that 64% of these stations would not provide interference-free service to the cities for which they are licensed and that 46% of them would not even be able to serve the principal business districts of their communities.

The losses would thus impair the present ability of stations to meet the needs and provide the advantages expected of radio to an extent much greater than that to which the extended hours would afford daytime stations an opportunity to render similar service. For example, as to service in emergencies, it is desirable for a local station to be able to render such service; but not at the expense of the ability of other stations to render similar service, when the population lost would be much greater than the population gained.[19] The same consideration applies in the case of the Commission's CONELRAD system. The optimum value of this system is obtained only when radio service is maintained reasonably unimpaired.

50. With respect to service in emergencies and generally, it must be borne in mind that under the DBA proposal, while individual communities would gain some service, the nation as a whole would lose much more than it would gain. The area and population served by the daytime stations would be severely limited as compared to their daytime coverage, and the primary service rendered by full-time stations would suffer vast inroads. The result would be the curtailment of presently available primary service to large areas and populations, especially rural areas, during the hours in question.[20]

19/ As some of the opponents have noted, other methods are available to bring locally originated nighttime radio services to the 913 communities now without such service. In some cases the daytime stations on regional channels and on foreign clear channels could bring a full-time service to their principal communities by installing directional antennas for nighttime operation on the same or some other frequency. Where this would not be feasible, the daytime stations might consider constructing and operating FM stations. As shown by data in the record, FM stations can give much greater coverage of the communities and surrounding areas during night hours than that obtainable from a daytime-only station subject to the limitations which would prevail. It is reasonable to assume that the public would purchase FM receivers if there is sufficient unsatisfied need for radio services in these communities.

20/ For example, a large area in New York, Pennsylvania, and New Jersey, now served by New York City clear channel stations with a groundwave signal nighttime of at least 0.5 mv/m, would lose the service of these stations. Within this area of approximately 11,000 square miles, nearly 6,500 square miles would have no primary service available during these hours in spite of the fact that daytime-only stations would be serving very small portions of the area. Of the approximately 644,000 rural population within this area, about 323,000 would continue to receive primary service during these hours from daytime stations and existing full-time stations as limited by the additional interference; but about 321,000 persons, who now receive service from New York stations would have available to them no nighttime primary service from any source. Similarly, around Greenville, South Carolina, operation by daytime stations under the DBA proposal would cause severe losses to full-time Greenville stations during post-sunset hours. Daytime stations would serve portions of this area, and also additional adjacent areas not now receiving primary service during post-sunset hours. The record also discloses that "white" area would be similarly created around Dallas, Omaha, Salt Lake City, Phoenix and other cities.

51. The proponents assert that extended hours of operation are needed to permit daytime stations to carry many programs of sole or primary interest to outlying rural areas. The licensees of a number of clear channel and unlimited-time regional stations reply that they already provide extensive unique programming designed solely for rural listeners; that this programming has a wide appeal to farm listeners, evidenced by mail received from such listeners in all parts of their service areas; and that these programs are principally scheduled during morning and evening mealtime hours, which are pre-sunrise and post-sunset hours during winter months. The mutually destructive interference which would result from permitting all stations on regional and clear channels to operate with daytime facilities in pre-sunrise and post-sunset hours would have the effect of largely wiping out the service to rural areas of both the full-time and the daytime stations.[21] In this connection, a national organization representing rural interests, the National Grange, filed an opposition in which it stated that the instant proposal would result in a severe reduction in satisfactory radio service to millions of persons in rural areas.[22] We are of the view that, instead of greater service to rural areas, the proposal would result in markedly less service.

52. One of the cornerstones of the DBA argument is that the distant stations do not provide a useful service for communities located at some distance from them and, furthermore, now that better signals are available, listeners are not content to listen to the mediocre signal of a distant station. In short, it is urged, the allocation scheme designed to protect wide-area coverage is archaic. DBA asserts that whether a station's service is of value cannot be ascertained by technical concepts and rules, but should be determined by surveys of the extent to which the station is regularly received by listeners. DBA asserts that such surveys would show distant stations have little or no listener significance. While not advancing such data itself (a few proponents advanced very fragmentary data of this sort), DBA asserts that it is clearly within the ability of the full-time stations to do so. The interference entailed by the DBA proposal

---

21/ As an example of this loss of rural service, the licensee of Station KSAL, Salina, Kansas, asserts that 35 cities and towns and extensive rural area encompassing all of five counties and parts of other counties, now served at night by KSAL and by two other stations, would lose all primary nighttime service.

22/ Another national farm organization, the National Council of Farm Cooperatives, while not taking a firm position opposing the proposal, asks that the Commission carefully consider its possible adverse effect upon rural listeners.

would not however, affect merely, or principally, distant stations, but would have a most serious effect upon the service of regional stations close to or even within the community to which they are assigned.

53. A number of full-time stations, both clear channel and regional, made showings that their programming which was specifically geared to outlying communities and rural areas within their service contours. This programming includes agricultural programs, civic programs for each community and local sporting events. The Clear Channel Broadcasting Service (CCBS), in its comments filed on August 15, 1958, in the Clear Channel Proceeding (Docket No. 6741), submitted mail response tabulations of its member stations to show that large numbers of persons living great distances from clear channel stations listen to the nighttime skywave signals of these stations. This data reveals the following mail response for the listed clear channel stations, each of which elicited such response from its listeners by announcements made during periods of up to two weeks during the month of June 1958:23/

Station & Location	Dates Announcements made in 1958	Mail Response from Secondary Service Area Only (i.e., beyond nighttime groundwave contour)
'SM, Nashville, Tenn.	June 20-28	718 counties in 36 states
'LW, Cincinnati, Ohio	June 24-27	138 counties in 24 states
'G , Chicago, Ill.	June 17-25	290 counties in 34 states
WWL, New Orleans, La.	June 9-22	476 counties in 32 states
'PO, Des Moines, Iowa	June 20-27	100 counties in 27 states
'OAI, San Antonio, Tex.	June 23-27	289 counties in 26 states.

Storer Broadcasting Company, in its reply comments filed in this proceeding, tabulated the mail received from listeners of its Class I-B station WWVA, Wheeling, West Virginia, in the month of April, 1958. During that month mail was received from 41 states. 56% of the mail was received from states located entirely outside of the primary groundwave service contour of WWVA. In sum, no data of which the Commission is aware, shows or tends to show that the listening habits of the nation have changed in such a way that distant stations should no longer be protected or daytime stations be permitted to operate in spite of the resultant interference of the magnitude involved here.

23/ The CCBS comments in Docket No. 6741 also include listener data for other member stations. Since these other stations, however, obtained mail from listeners in response to announcements made over extended periods of time, instead of only during a short period in June 1958, they are not included in this tabulation.

54. Some proponents contend that extended hours for daytime broadcasters should be considered as a means for improving the capacity of daytime broadcasters as "little business" to compete with other, bigger stations. It would not be realistic, however, to treat the proposal in this light. Extended hours for daytime stations would adversely affect numerous other small broadcasters, including small unlimited time stations whose service areas and populations reached would be drastically curtailed by interference caused by extended hours of operation of daytime stations. Moreover, apart from the fact that the proposal does not involve a simple conflict between smaller broadcasters on the one side and bigger broadcasters on the other, we cannot lose sight of the primary basis on which the Commission is called upon to assess the effect of the proposal on the public interest; that is, its effect on services provided to the public. In this respect the evidence overwhelmingly establishes that adoption of the proposal would permit highly circumscribed increases in service by daytime stations at the prohibitive cost of destroying service now rendered to many millions of people by numerous other stations, both large and small.

Operation under 3.87 as a precedent for the DBA Proposal

55. A number of the proponents claim that operation as contemplated by the subject proposal has already proved workable by the practice under Section 3.87 of the Commission's Rules, which permits all stations except certain Class II stations to begin operation with their daytime facilities at 4:00 AM, unless undue interference is caused thereby to full-time stations. It is asserted that relatively few complaints about interference have been received in connection with such operations, indicating an absence of substantial objectionable interference. We are of the opinion that this situation affords no basis for favorable consideration of the DBA proposal. The fact that few complaints have been received is doubtless a reflection of the fact that many full-time stations do not go into operation until some time after 4:00 AM and interference conditions are thereby minimized; whereas the DBA proposal would permit nighttime operation by daytime stations in the early evening when all full-time stations are in operation, and would therefore result in interference of the vast magnitude

61308 O—60——5

already discussed. Legally, the DBA proposal is substantially different from the present 3.87 situation because the latter is a privilege which may be cancelled immediately by the Commission upon a showing of undue interference by a full-time station, while the DBA proposal would confer the privilege of non-daytime operation upon daytime stations as a matter of right, regardless of interference which would be caused.

CONCLUSIONS

56. Amendment of the Rules as proposed by the DBA would not serve the public interest. The population which would gain service during these hours is vastly exceeded by the population which would lose the service of existing stations because of the additional interference which would result on all but a few of the 107 standard broadcast frequencies from the operation of daytime stations during the non-daytime hours (before sunrise and after sunset) contemplated by the proposal. The daytime stations so operating during non-daytime hours would generally serve only a very small fraction of the areas and populations which they serve during daytime hours, a fact which would sharply limit the gains in service which would result. As a result of the additional interference so created, clear channel, unlimited time Class II and Class III stations would be limited in service so that in many instances they could not serve even all of the communities to which they are assigned. While a first nighttime primary service would be afforded to some population during these hours, and a first local service would be afforded to more than 900 communities in the nation, extensive "white areas", in which the population would lose all nighttime primary service would be created. On virtually all of the clear channels all secondary service would be destroyed. Because of this destruction of secondary service (the only service received by some 20,000,000 persons in about one-half of the area in the United States) and vast impairment of primary service during the hours involved, service to rural areas would be lost. Severe interference to foreign stations, inconsistent with international understanding, would occur. We cannot conclude that, on balance, we are warranted in extending the proposed service. With respect to aspects of radio such as service in emergencies, this is a function of all broadcast service, and any over-all degradation of broadcast service must necessarily create greater needs in these respects than those it fulfills. As to the argument that the gained local service would be of value to the local population, whereas the lost service from distant stations is of no consequence to the populations who would lose it, the record shows that the service lost would not be solely or principally that of distant stations but would occur close to the communities where such stations are located as well as at greater distances. Moreover, the record shows that many full-time stations, both clear and regional, program for the outlying communities which would lose service. Other arguments advanced, such as the economic interests of daytime stations and small communities and the precedent said to be afforded by the practice under Section 3.87 of the Rules, have been dealt with above. We are therefore persuaded that DBA's proposal would not serve the public interest and must be denied.

57. In view of the foregoing, IT IS ORDERED, That the above-captioned petition of Daytime Broadcasters Association, Inc. IS DENIED, and this proceeding IS TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION*

Mary Jane Morris
Secretary

Adopted: September 19, 1958

Released: September 19, 1958

* See attached Concurring Statement of Commissioner Cross.

CONCURRING STATEMENT OF COMMISSIONER CROSS

I concur with the conclusion that the petition to permit all daytime standard broadcast stations to operate from 5 a.m. or sunrise, whichever is earlier, to 7 p.m. or sunset, whichever is later, should be denied. I reach this conclusion with regret because I recognize the desirability of enabling daytime stations to give longer hours of service to their communities. This is particularly evident in the case of daytime stations serving communities without local unlimited time standard broadcast stations. Careful analysis and evaluation of the record of this proceeding discloses, however, that such limited additional service as might be made possible under the proposed rule amendment could be achieved only at the excessive cost of creating vast new interference areas and the destruction of service to a disproportionately large number of people, as set out in detail in the Commission's Report and Order.

APPENDIX I
Daytime-Only Stations
Issues (a) and (b)

Station	Present Daytime Service		Service During Proposed Additional Hours 1/				
	Population	Area (Miles)^2	Population	% of Area Pop.	Area	% of Area Area	Time of Sunrise Sunset
560kc							
WOOF-Dothan, Ala.	662,136	20,481	81,773	12	1,452	7	6:00 5:45 6:30 4:45 Same 2/
570kc							
WXXI-Biloxi, Miss.	313,497	7,210	36,053	12	64	0.9	6:00 6:00 6:45 5:00 Same
620kc							
WCAY-Cayce, S.C.	282,404	4,060	24,392	9	30	0.7	6:30 6:30 7:30 5:15 Other
630kc							
WAVU-Albertville, Ala.	329,574	-	23,307	7	-	-	6:00 5:45 6:45 4:30 None
640kc 1/							
WMAD-Normal, Iowa	2,292,204 2,292,204	75,904 75,904	490,285 627,459	21 27	6,670 11,120	9 15	6:45 6:30 7:30 5:15 Same
1/							
WOI-Ames, Iowa	1,201,725 1,201,725	48,848 48,848	275,880 368,690	23 31	843 2,085	2 4	6:30 6:15 7:30 4:45 Other
650kc 1/							
KRCT-Pasadena, Tex.	1,012,178 1,012,178	13,054 13,054	24,605 81,544	24 81	33 105	0.1 0.1	6:30 6:30 7:30 5:30 Other

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles)^2	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	Area	% of Pres. Area	Time of Sunrise Sunset
660kc 1/							
WESC-Greenville, S.C.	674,000	10,320	103,000	15	120	1	6:45 6:30
	674,000	10,320	108,000	16	200	2	7:30 5:15
1/							Same 3/
KSKY-Dallas, Tex.	1,753,000	36,050	681,000	39	2,200	6	6:45 6:30
	1,753,000	36,050	719,000	41	2,690	8	7:30 5:15
1/							Same
KOWH-Omaha, Neb.	1,068,000	30,800	337,000	32	710	2	6:45 6:30
	1,068,000	30,800	345,000	32	790	3	7:45 5:00
680kc 1/							Same
KOMW-Omak, Wash.	43,700	8,660	4,900	11	100	1	6:15 6:0
	43,700	8,660	8,900	20	430	5	7:45 4:0
690kc							None
WAPE-Jacksonville, Fla.	697,856	18,373	42,373	6	423	2	6:45 6:3
							7:15 5:3
740kc 1/							Same
KBIG-Avalon, Calif.	5,093,309	7,210	1,667	0.1	20	0.3	6:00 6:0
	5,093,309	7,210	1,693	0.1	31	0.4	6:45 4:4
750kc 1/							Other
WBMD-Baltimore, Md.	1,409,792						
	1,409,792	5,558					
		5,558	442,336	31	56	1	6:15 6:1
1/			900,179	64	187	3	7:15 4:4
KSEO-Durant, Okla.	399,843	18,713	11,624	3	30	0.2	Same
	399,843	18,713	12,387	3	64	0.3	6:30 6:30
							7:30 5:15
							Other

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles²)	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	Service During Proposed Additional Hours 1/: Area	% of Pres. Area	Time of Sunrise	Time of Sunset 3/
750kc 1/								
WPDX-Clarksburg, W. Va.	336,309	3,425	24,795	8	39	1	6:30	6:30
	336,309	3,425	46,387	14	171	5	7:30	5:00
							Same 3/	
760kc 1/								
WCPS-Tarboro, N.C.	217,122	2,922	11,273	5	30	1	6:15	6:15
	217,122	2,922	14,300	7	99	3	7:15	5:00
							Other	
790kc								
WSIG-Mt. Jackson, Va.	—	—	4,136	-	-	-	6:30	6:15
							7:30	5:00
							Other	
810kc								
WCEC-Rocky Mt., N.C.	—	—	23,336	-	31	-	7:00	5:45
							7:15	5:00
							Same	
WDDO-Pcheesport, Pa.	—	—	105,769	-	30	-	6:30	6:30
							7:30	5:00
							Same	
WIPA-Annapolis, Md.	—	—	19,592	-	9	-	6:15	6:15
							7:15	4:45
							Same	
WKBC-North Wilkesboro, N.C.	—	—	10,577	-	33	-	6:30	6:30
							7:30	5:15
							Same	
820kc 1/								
WAIT/WCBD Chicago, Ill.	5,724,707	16,778	1,541,991	27	558	3	6:15	6:00
	5,724,707	16,778	3,315,905	58	1,070	6	7:15	4:30
							Same	

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles²)	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	Area	% of Pres. Area	Time of Sunrise Sunset
820kc							
WIKY-Evansville, Ind. 1/	382,451	6,164	72,937	19	25	0.4	6:00 6:00
	382,451	6,164	143,884	38	105	2	7:00 4:30
							Same 3/
WCSU-Columbus, Ohio	1,779,379	21,690	506,038	28	539	25	6:45 6:45
							7:45 5:15
							Same
840kc							
WKNB-New Britain Conn. 1/	647,414	2,290	84,626	13	43	2	6:00 6:00
	647,414	2,290	230,160	36	191	8	7:15 4:15
							Same
WVPO-Stroudsburg, Pa. 1/	92,662	1,134	9,861	11	6	0.5	6:15 6:00
	92,662	1,134	16,885	18	38	3	7:15 4:30
							Other
890kc							
KBYE-Oklahoma City, Okla.	-	-	170,710	-	132	-	6:45 6:30
							7:30 5:15
							Same
WHNC-Henderson, N.C.	-	-	15,750	-	30	-	7:30 7:15
							8:15 6:00
							Same
910kc							
WPLA-Plant City, Fla.	-	-	22,129	-	158	-	6:45 6:30
							7:15 5:30
							Other
WLAS-Jacksonville, Fla.	-	-	10,683	-	885	-	6:15 6:15
							7:15 5:00
							Same

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles²)	Service During Proposed Additional Hours 1/: Population	Service During Proposed Additional Hours 1/: % of Pres. Pop.	Service During Proposed Additional Hours 1/: Area	Service During Proposed Additional Hours 1/: % of Pres. Area	Time of Sunrise Sunset
910kc							
WAVL-Apollo, Pa.	-	-	42,199	-	181	-	6:30 6:30 7:30 5:00 Other 3/
WAYL-Roanoke, Va.	-	-	103,089	-	78	-	6:30 6:30 7:30 5:00 Same
WHSN-Hayward, Wisc.	-	-	2,116	-	51	-	6:15 6:15 7:45 4:15 Other
920kc							
KTLN-Texas City, Tex.	1,132,830	13,120	29,240	3	105	0.8	6:30 6:30 7:00 5:15 Other
930kc							
WTGR-Bambridge, Ga.	-	-	-	-	-	5	6:45 6:45 7:30 5:45 None

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles²)	Service During Proposed Additional Hours 1/: Population	Service During Proposed Additional Hours 1/: % of Pres. Pop.	Service During Proposed Additional Hours 1/: Area	Service During Proposed Additional Hours 1/: % of Pres. Area	Time of Sunrise	Time of Sunset
970kc								
WRCS-Ahoskie N.C.	—	—	2,470	-	20	-	6:15 7:15 None 3/	6:15 5:00
980kc								
KTAL-Shreveport, La.	616,156	15,352	168,852	27	369	2	6:30 7:15 Same	6:15 5:15
1040kc 1/								
KLIF-Dallas, Tex.	1,441,149 1,441,149	21,353 21,353	300,986 540,695	21 37	141 394	0.7 2	6:45 7:30 Same	6:30 5:15
1070kc								
WHPE-High Point, N.C.	829,349	28,022	24,302	3	22	0.1	6:30 7:30 Same	6:30 5:00
1090kc								
KWWS- aterloo, Iowa	338,274	9,205	5,885	2	25	0.3	6:30 7:30 Same	6:15 4:30
WCRA-Effingham, Ill.	113,188	3,990	9,071	8	95	2	6:00 7:00 Other	6:00 4:30
WILD-Boston, Mass.	1,865,111	1,345	98,425	5	7	0.5	6:00 7:00 Same	5:45 4:15

Station	Present Daytime Service: Population	Present Daytime Service: Area (sq. miles)	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	% of Pres. Area	% of Pr s. Area	Time of Sunrise	Time of Sunset
1090kc								
WMUS-Muskegon, Mich.	141,540	985	56,228	40	77	8	7:00 8:15	6:45 5:15
							Same 2/	
1120kc								
KCLE-Cleburne, Tex. 1/	186,218 186,218	6,741 6,741	5,957 14,371	3 7	27 53	0.4 0.8	6:45 7:30 Other	6:30 5:30
WWOL-Buffalo, N.Y. 1/	964,485 964,485	3,192 3,192	173,667 503,497	18 52	78 187	2 6	6:30 7:45 Other	6:15 4:45
WUST-Bethesda, Md. 1/	826,419 826,419	716 716	18,006 38,194	22 47	9 21	1 3	6:15 7:15 Same	6:15 4:45
1140kc								
WSIV-Peking, Ill.	-	6,800	-	-	37	0.5	6:15 7:15 Other	6:00 4:30
1150kc								
WCHF-Chippewa Falls, Misc.	179,056	5,182	17,389	10	158	3	6:15 7:30 Other	6:15 4:30
WYYC-Rock Hill, S. C.	172,151	-	21,753	13	-	-	6:30 7:30 Same	6:30 5:15

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles)^2	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	Area	% of Pres. Area	Time of Sunrise	Time of Sunset
1160kc								
WJJD-Chicago, Ill.	6,409,837	22,735	1,139,602	18	20,150	89	6:15 7:15	6:00 4:30
							Same	3/
1170kc								
WLBH-Mattoon, Ill.	111,659	2,870	37,468	33	400	14	6:00 7:00	6:00 4:30
							Other	
1210kc								
WADE 1/ - Wadesboro N.C.	84,420	1,446	3,974	5	11	0.1	6:15	6:30
	84,420	1,446	4,238	5	17	0.1	7:15	5:15
							Other	
WAVI 1/-Dayton, Ohio	599,182	2,816	91,453	16	11	0.1	6:45	6:45
	599,182	2,816	246,461	41	26	0.1	7:45	5:15
							Same	
WCNT 1/-Centralia, Ill.	189,825	5,720	20,684	11	88	2	6:15	6:00
	189,825	5,720	24,600	13	132	3	7:00	4:30
							Other	
WKNX 1/-Saginaw, Mich.	460,045	4,670	101,378	22	36	1	6:45	6:45
	460,045	4,670	107,737	23	79	2	8:00	5:00
							Same	
1250kc								
WLEM-Emporium, Pa.	17,174	1,177	3,947	23	22	2	6:30 7:30	6:15 4:45
							Same	
1260kc								
WJBL-Holland, Mich.	-	-	7,047	-	13	-	7:00 8:15	6:45 5:15
							Same	

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles)^2	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	% of Pres. Area	Time of Sunrise Sunset
1280kc						
WJK-Jacksonville, Fla.	-	-	138,636	-	61 -	6:45 6:30 7:15 5:30 Same 3/
1290kc						
WTRN-Tyrone, Pa.	-	-	10,333	-	36 -	6:30 6:15 7:30 4:45 Same
1300kc						
WCKI-Greer, S.C.	-	693	2,329	-	14 -	6:45 6:30 7:30 5:15 Other
1320kc						
WHIE-Griffin, Ga.	-	-	4,524	-	11 0.2	6:45 6:45 7:30 5:30 Same
WLLY-Richmond, Va.	-	1,017	77,700	-	- -	6:30 6:15 7:15 5:00 Same
1330kc						
KDOK-Tyler, Tex.	167,568	3,850	42,337	25	85 2	6:30 6:30 7:15 5:15 Same
WAST-Fort Pierce, Fla.	-	-	12,473	-	- -	6:30 6:45 7:00 5:30 Same
1380 Kc						
KLIZ-Brainerd, Minn.	35,500	1,676	13,186	37	31 19	6:30 6:15 8:00 4:30 other
WAYZ- Waynesbere, Pa.	107,442	909	12,916	12	20 3	6:30 6:15 7:30 4:45 None

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles²)	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	% of Pres. Area	Time of Sunrise	Time of Sunset
1390kc							
BP-11326-Albany, Ky.	54,279	1,545	6,897	13	11	0.7	6:00 5:45 6:45 4:30 Other 2/
1420kc							
WACT-Tuscaloosa, Ala.	106,870	1,791	37,290	35	43	3	6:00 6:00 6:45 4:45 Other
1430kc							
KSLJ-Gladewater, Tex.	-	3,118	-	-	43	1	6:30 6:30 7:15 5:15 Other
1460kc							
WFMH-Cullman, Ala	-	-	13,654	-	-	-	6:00 6:00 6:45 4:45 Same
WOCH-Mt. Vernon, Ind.	-	-	10,333	-	36	-	6:00 6:00 7:00 4:30 Other
1480kc							
WYZE-Atlanta, Ga.	-	-	224,689	-	-	-	6:45 6:45 7:30 5:30 Same

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles)^2	Service During Proposed Additional Hours 1/: Population	Service During Proposed Additional Hours 1/: % of Pres. Pop.	Service During Proposed Additional Hours 1/: Area	Service During Proposed Additional Hours 1/: % of Pres. Area	Time of Sunrise Sunset
1510kc							
KCTX-Childress, Tex.	53,484	6,605	9,189	17	139	2	6:45 6:45 7:30 5:30 None 3/
KIMO-Independence, Mo.	905,687	6,335	720,900	80	556	9	6:30 6:30 7:30 5:00 Other
KSTV-Stephenville, Tex.	48,887	3,520	4,051	8	31	0.9	6:45 6:45 7:30 5:30 Other
WAUK-Waukesha, Wisc.	439,840	1,732	4,406	1	12	0.7	6:00 6:00 7:15 4:15 Other
WKAI-Macomb, Ill.	58,406	1,979	11,369	20	50	3	6:15 6:15 7:15 4:45 None
1560kc							
WTNS-Coshocton, Ohio	-	-	14,429	-	-	-	6:45 6:30 7:45 5:00 Other
WTOD-Toledo, Ohio	-	-	47,226	-	-	-	6:45 6:45 8:00 5:00 Same
1600kc							
WONO-Oneida, N.Y.	-	2,642	-	-	72	3	6:15 6:00 7:30 4:30 Same

Station	Present Daytime Service: Population	Present Daytime Service: Area (Miles)^2	Service During Proposed Additional Hours 1/: Population	% of Pres. Pop.	Area.	% of Pres. Area	Time of Sunrise Sunset

NOTE:

1/ Nighttime Service Under Proposal: Where two sets of figures are shown, the upper set applies to the second hour of operation following sunset (or before sunrise) and the lower set applies to the first hour of operation following sunset.

2/ Time of Sunrise and Sunset: Sunrise and sunset time in local standard time for March (representative of spring and fall) is indicated by the upper set of figures and for December (representative of mid-winter) by the lower set of figures in each instance. During most summer months sunrise occurs before 5 AM and sunset occurs after 7 PM.

3/ Present Nighttime Primary Service to the Community: Primary service from another station located in the same city or town is shown as "Same", from another station not in the same city or town as "Other", and from no other station as "None".

4/ A blank space indicates that the data is not now available.

APPENDIX II
UNLIMITED TIME STATIONS

Issues (c) and (d)

Station	Present Nighttime Primary Service		Loss of Nighttime Primary Service Under Proposal[1]			
	Population	Area (Miles^2)	Population	Percent of Present Population	Area	Percent of Present Area
540 Kc						
KFMB-San Diego Calif.	-	-	21,074	-	307	-
560 Kc						
KFDM-Beaumont, Texas	1,195,152	10,481	766,742	64	6,798	65
KLZ-Denver, Col.	-	-	None from existing stations.			
WFIL-Philadelphia, Pa.	3,690,477	2,969	197,455	6	1,008	34
WIND-Chicago, Ill.	6,059,065	4,029	968,460	16	2,274	59
WIS-Columbia, S. Carolina	226,100	1,940	91,000	40	1,485	76
WQAM-Miami Florida	516,353	1,366	85,259	16	1,020	75
570 Kc						
KLAC-Los Angeles, Calif.	-	-	1,749,551	-	1,058	-
KVI-Seattle, Washington	-	5,480	-	-	2,860	52
WFAA-Dallas, Texas	1,532,981	19,700	411,563	27	13,905	71
WKBN-Youngstown, Ohio	906,053	3,858	453,085	50	2,183	57
WNAX-Yankton, S. Dakota	459,000	6,530	134,900	29	2,950	45
WSYR-Syracuse, N.Y.	549,860	2,825	139,120	25	1,275	45

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
580 Kc						
KMJ-Fresno, Calif.	-	16,042	-	-	14,273	89
WDBO-Orlando, Fla.	190,710	2,490	80,190	41	1,500	60
WIBW-Topeka, Kansas	574,704	21,198	147,603	26	5,508	26
WTAG-Worcester, Mass.	420,736	8,408	86,248	21	2,582	31
590 Kc						
WOW-Omaha, Neb.	1,608,078	44,378	1,160,559	72	40,655	92
600 Kc						
WCAO-Baltimore, Md.	1,334,190	1,400	107,560	8	810	58
WREC-1/- Memphis, Tenn.	933,161	10,710	407,770	44	8,520	80
	986,393	12,200	367,833	37	8,600	70
WSJS-Winston-Salem, N. C.	355,360	1,220	68,160	19	430	35
620 Kc						
KTAR-Phoenix, Arizona	-	18,815	-	-	16,374	88
WSUN-St. Petersburg, Fla.	544,215	3,424	104,717	19	1,678	49
WTMJ-Milwaukee, Wis.	1,947,197	9,155	565,889	29	4,265	47
630 Kc						
KOH-Reno, Nev.	-	2,900	-	-	1,904	66
WPRO-Providence, R. I.	818,542	-	106,089	12	-	-
640 Kc 1/						
KFI-Los Angeles, Calif.	5,485,039	35,206	183,425	3	17,445	50
	5,485,039	35,206	134,642	3	13,741	39

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Percent of Present Population	Area	Percent of Present Area
650 Kc						
WSM[1/] - Nashville, Tenn.	1,783,166	36,869	776,273	43	21,396	58
	1,783,166	36,869	574,031	32	15,998	43
660 Kc						
WRCA[1/2/], New York, N.Y	-	-	6,091,000	-	49,100	-
	-	-	4,685,000	-	31,700	-
680 Kc						
KNBC[1/2/] - San Francisco, Calif.	4,416,000	107,100	715,000	16	84,900	79
	4,416,000	107,100	437,000	10	67,700	62
WCBM-Baltimore, Md.	1,225,046	501	53,252	4	236	47
690 Kc						
WTIX-New Orleans, La.	713,843	2,026	168,373	24	1,726	85
710 Kc						
KGNC-Amarillo, Texas	223,350	13,373	None from existing stations.			
KMPC-Los Angeles, Calif.	-	-	None from existing stations			
WHB-Kansas City, Mo.	848,632	3,843	None from existing stations			
740 Kc						
KCBS[1/] - San Francisco	3,268,035	14,588	538,941	17	9,606	68
	3,288,221	15,273	398,628	12	8,189	54
KRMG-Tulsa, Oklahoma	309,131	2,167	92,448	30	1,373	63
750 Kc						
WSB[1/] - Atlanta, Ga.	1,366,803	321,796	800,282	59	20,333	6
	1,366,803	321,796	744,920	55	19,243	6
760 Kc						
WJR[1/] - Detroit, Mich.	9,045,957	54,402	4,421,630	49	42,210	78
	9,045,957	54,402	2,107,158	23	29,032	54

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
770 Kc						
WABC 2/- New York, N. Y.	-	57,295	-	-	51,045	89
790 Kc						
WEAN-Providence, R.I.	776,780	1,020	339,355	44	802	79
WMC-Memphis, Tenn.	605,693	3,040	123,901	20	2,268	81
WTAR-Norfolk, Va.	631,903	1,720	187,721	30	1,228	72
820 Kc 2/						
WGY-Schenectady, N. Y.	4,790,983	79,046	4,123,008	86	75,983	96
820 Kc						
WFAA/WBAP 1/- Dallas-Ft. Worth, Texas	3,727,792 3,727,792	124,356 124,356	2,004,171 1,607,085	54 43	99,292 85,952	80 69
840 Kc						
WHAS 2/- Louisville, Ky.	4,161,045 4,161,045 1/	57,708 57,708	2,941,639 1,754,601	71 42	47,036 37,740	81 65
850 Kc						
KOA-Denver, Colo.	200,320	-	183,870	92	-	-
890 Kc						
WLS 2/- Chicago, Ill.	10,883,382	143,634	5,278,339	49	134,296	94
910 Kc						
KPHO-Phoenix, Ariz.	283,120	3,500	31,160	11	2,170	62
WGAF-Valdosta, Ga.	-	-	5,197	-	47	-
WFDF-Flint, Mich.	268,433	759	18,293	7	339	45
WABE-Bangor, Maine	-	-	No increase due to existing stations			
WGBI-Scranton, Pa.	-	315	-	-	161	51

Station	Present Nighttime Primary Service		Loss of Nighttime Primary Service Under Proposal			
	Population	Area (Miles^2)	Population	Percent of Present Population	Area	Percent of Present Area
WHAY-New Britain, Conn.	-	-	40,953	-	22	-
WJHL-Johnson City, Tenn.	62,132	290	18,718	30	188	65
WORD-Spartanburg, S. C.	-	-	7,300	-	33	-
WRNL-Richmond, Va.	265,620	320	83,570	32	175	55
WPFF-Middletown, O.	-	-	30,322	-	80	-
WSBA-York, Pa.	-	-	74,139	-	164	-
920 Kc						
KARK-Little Rock, Ark.	234,760	790	57,050	24	430	54
WJAR-Providence, R. I.	800,000	610	346,500	43	440	72
930 Kc						
WBEN-Buffalo, N. Y.	1,176,959	2,898	245,056	21	2,352	81
WFMD-Frederick, Md.	23,270	90	1,770	8	37	59
WIST-Charlotte, N. C.	161,050	210	49,260	30	160	76
WJAX-Jacksonville, Fla.	298,878	1,146	118,008	43	953	83
WKY[1]- Oklahoma City, Okla.	956,641 782,947	19,750 14,050	556,084 303,262	58 39	17,310 9,050	86 64
WTAD-Quincy, Ill.	93,219	1,189	44,873	48	1,021	86

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
950 Kc						
KPRC-Houston, Texas	1,079,587	11,800	392,154	36	10,846	92
WWJ-Detroit, Mich.	3,013,096	3,435	1,572,250	52	2,844	83
960 Kc						
KMA-Shenandoah, Iowa	-	8,090	-	-	5,899	63
WELI-New Haven, Conn.	270,400	216	98,800	37	174	80
WSBT-South Bend, Ind.	207,758	267	43,896	21	173	65
970 Kc						
KBEE-Modesto, Calif.	-	428	-	-	194	45
KOIN-Portland, Oregon	737,801	2,416	107,055	15	1,469	62
WAVE-Louisville, Ky.	655,608	2,895	295,380	45	2,773	96
WCSH-Portland, Maine	219,024	760	67,731	31	620	82
WDAY-Fargo, N.D.	519,000	30,484	434,000	84	28,648	94
WFLA-Tampa, Fla.	394,318	891	119,742	30	611	69
WWSW-Pittsburgh, Pa.	1,400,397	623	419,206	30	473	76
980 Kc						
KMBC-Kansas City, Mo.	1,186,054	8,695	350,046	30	6,685	77
WILK-Wilkes Barre, Pa.	212,669	105	62,928	30	37	35
WRC[1]- Washington, D. C.	-	-	370,700 191,400	-	720 630	-

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles^2)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
1020 Kc						
KDKA 1/ 2/-						
Pittsburgh, Pa.	6,604,000	72,200	4,362,000	66	69,025	96
	6,604,000	72,200	3,242,000	49	64,150	89
1030 Kc						
WEEI 1/						
Boston, Mass.	7,981,000	41,230	4,708,000	59	38,116	93
	7,981,000	41,230	435,000	6	37,100	90
1040 Kc						
WHO-Des Moines,	2,455,913	77,867	1,656,475	67	61,720	80
Iowa	2,455,913	77,867	1,289,947	53	51,935	67
1050 Kc						
WJZ 1/-New York,						
N. Y.	12,258,433	2,110	2,398,191	20	1,199	57
	12,258,433	2,110	2,135,278	17	1,116	53
1060 Kc						
WRCV 1/ 2/-						
Philadelphia,	-	-	1,617,000	-	10,100	-
Pa.	-	-	350,000	-	1,500	-
WDC-Washington,						
S. C.	1,117,111	289	625,046	56	226	56
1070 Kc						
WIRC-Indiana-						
polis, Ind.	540,985	751	22,349	4	213	29
1090 Kc						
KTHS-Little Rock,						
Ark.	588,104	16,740	307,873	52	14,995	90
WBAL-Baltimore,						
Md.	2,182,308	9,763	909,501	42	8,910	92
1100 Kc						
KYW 1/ 2/-	8,578,000	89,200	5,510,000	64	82,330	92
Cleveland, Ohio	8,578,000	89,200	4,986,000	58	77,220	87

Station	Present Nighttime Primary Service		Loss of Nighttime Primary Service Under Proposal			
	Population	Area (Miles^2)	Population	Percent of Present Population	Area	Percent of Present Area
1120 Kc						
KMOX 1/- St. Louis, Mo.	2,751,702 2,751,702	35,066 35,066	763,443 625,380	28 23	25,474 21,980	73 63
1130 Kc						
WCCY-Minneapolis, Minn.	1,029,846	1,619	229,361	22	1,410	87
1140 Kc						
WRVA-Richmond, Va.	1,087,379	9,610	462,983	43	7,490	78
1150 Kc						
KSAL, Salina, Kansas	115,704	5,233	77,212	67	3,940	75
WCOP-Boston, Mass.	1,864,380	330	779,720	42	240	73
WDEL-Wilmington, Del.	-	305,383	-	-	154,039	50
WISN-Milwaukee, Wisc.	969,809	860	162,498	17	677	79
1160 Kc						
KSL-Salt Lake City, Utah	619,229	45,114	101,814	16	26,265	58
1170 Kc						
KSTT-Davenport, Iowa	219,117	760	43,200	20	494	65
KVOO-Tulsa, Okla.	1,244,920	41,346	476,720	39	27,263	66
WCOV-Montgomery, Ala.	127,602	669	4,691	37	187	28
WWVA-Wheeling, W. Va.	2,933,953	16,222	2,523,042	86	13,454	82

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
1190 Kc						
KEX 1/ 2/-	1,261,000	2,800	504,000	40	24,790	89
Portland, Ore.	1,261,000	2,800	439,000	35	21,800	78
WOWO 1/ 2/-	5,426,000	88,140	4,173,000	77	67,540	77
Fort Wayne, Ind.	5,426,000	88,140	4,068,000	75	66,430	75
1210 Kc						
WCAU 1/-	4,976,314	11,380	1,693,316	34	10,002	88
Philadelphia, Pa.	4,976,314	11,380	1,345,703	27	9,150	80
1250 Kc						
WCAE-Pittsburgh, Pa.	1,628,238	989	501,698	31	802	82
1260 Kc						
WEZE-Boston, Mass.	2,123,425	695	697,950	33	516	74
WFBM-Indianapolis, Ind.	642,451	2,739	355,293	55	2,428	89
WMDC 1/-	1,117,111	289	625,046	56	226	78
Washington, D.C.	1,117,111	289	139,197	13	126	44
1270 Kc						
KFJZ-Fort Worth, Texas	1,076,073	4,000	486,556	45	2,119	53
WHBF-Rock Island, Ill.	247,282	1,348	105,005	43	1,130	84
WLBR-Lebanon, Pa.	46,906	69	9,259	20	45	65
WXYZ-Detroit, Mich.	2,795,221	1,172	841,573	30	895	76
1280 Kc						
KFOX-Long Beach, Calif.	2,244,000	1,041	2,075,000	93	888	85
WSDU-New Orleans, La.	720,560	1,364	62,220	9	1,117	82
WTCN-Minneapolis, Minn.	717,633	564	379,790	53	451	80
1290 Kc						
WHIO-Dayton, Ohio	692,270	1,935	328,360	47	1,695	87

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
WKNE-Keene, N. H.	23,140	275	10,280	44	230	83
WNBF-Binghampton, N. Y.	183,761	625	39,629	22	495	79
1300 Kc						
KGLO-Mason City, Iowa	131,338	2,210	91,055	69	1,704	77
WFBR-Baltimore, Md.	1,306,769	821	335,382	26	683	83
WMAK 1/-						
Nashville,	236,000	157	54,000	23	55	61
Tenn.	252,000	193	54,000	21	124	64
WOOD-Grand Rapids, Mich.	269,352	716	42,922	16	523	73
1310 Kc						
WISH 1/-						
Indianapolis,	527,446	588	414,423	79	520	95
Ind.	521,959	555	299,986	58	456	82
WKMH-Dearborn, Mich.	1,278,495	352	853,060	67	228	65
1320 Kc						
KDYL-						
Salt Lake City, Utah	337,116	2,428	36,269	11	1,027	42
KRCA-Sacramento, Calif.	-	-	None from existing stations			
WAMP 1/-						
Pittsburgh, Pa.	-	-	964,900	-	820	-
	-	-	886,000	-	810	-
1330 Kc						
KFH-Wichita, Kansas	435,320	8,349	172,079	74	6,199	40

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles^2)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
KPOJ-Portland, Ore.	637,867	865	213,048	33	656	76
WETM-Danville, Va.	-	107	-	-	42	39
WEVD-New York, N. Y.	7,622.051	394	3,935,986	52	287	73
1350 Kc						
KRNT-Des Moines, Iowa	334,290	2,920	113,830	34	2,460	84
KSRO-Santa Rosa, Calif.	164,653	-	92,698	56	1,172	-
WEEK-Peoria, Ill.	183,240	322	55,018	30	266	83
WORK-York, Pa.	131,523	-	45,688	34	-	-
1370 Kc						
WSPD-Toledo, Ohio	647,682	3,094	280,561	43	2,538	82
1380 Kc						
KSBW-Salinas, Calif.	-	-	33,548	-	755	-
KWK-St. Louis, Mo.	2,002,926	2,785	786,801	39	2,386	50
WMBG-Richmond, Va.	267,756	150	53,938	20	101	67
1390 Kc						
WCSC-Charleston, S. C.	143,800	420	14,090	10	265	63

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
WKNE-Keene, N. H.	23,140	275	10,280	44	230	83
WNBF-Binghampton, N. Y.	183,761	625	39,629	22	495	79
1300 Kc						
KGLO-Mason City, Iowa	131,338	2,210	91,055	69	1,704	77
WFBR-Baltimore, Md.	1,306,769	821	335,382	26	683	83
WMAK 1/-						
Nashville,	236,000	157	54,000	23	55	61
Tenn.	252,000	193	54,000	21	124	64
WOOD-Grand Rapids, Mich.	269,352	716	42,922	16	523	73
1310 Kc						
WISH 1/-						
Indianapolis,	527,446	588	414,423	79	520	95
Ind.	521,959	555	299,986	58	456	82
WKMH-Dearborn, Mich.	1,278,495	352	853,060	67	228	65
1320 Kc						
KDYL-						
Salt Lake City, Utch	337,116	2,428	36,269	11	1,027	42
KRCA-Sacramento, Calif.	-	-	None from existing stations			
WAMP 1/-						
Pittsburgh, Pa.	-	-	964,900	-	820	-
	-	-	886,000	-	810	-
1330 Kc						
KFH-Wichita, Kansas	435,320	8,349	172,079	74	6,199	40

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles^2)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
KPOJ-Portland, Ore.	637,867	865	213,048	33	656	76
WBTM-Danville, Va.	-	107	-	-	42	39
WEVD-New York, N. Y.	7,622,051	394	3,935,986	52	287	73
1350 Kc						
KRNT-Des Moines, Iowa	334,290	2,920	113,830	34	2,460	84
KSRO-Santa Rosa, Calif.	164,653	-	92,698	56	1,172	-
WEEK-Peoria, Ill.	183,240	322	55,018	30	266	83
WORK-York, Pa.	131,523	-	45,688	34	-	-
1370 Kc						
WSPD-Toledo, Ohio	647,682	3,094	280,561	43	2,538	82
1380 Kc						
KSBW-Salinas, Calif.	-	-	33,548	-	755	-
KWK-St. Louis, Mo.	2,002,926	2,785	786,801	39	2,386	50
WMBG-Richmond, Va.	267,756	150	53,938	20	101	67
1390 Kc						
WCSC-Charleston, S. C.	143,800	420	14,090	10	265	63

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
WFMJ-Youngstown, Ohio	367,353	433	124,751	34	232	54
WFNC-Fayetteville, N. C.	47,220	50	2,750	6	15	30
KERN-Bakersfield, Calif.	-	1,450	-	-	1,226	85
WING-Dayton, Ohio	633,000	2,100	491,000	78	2,035	97
1420 Kc 1/						
WRBL-Columbus, Ga.	135,700	206	30,530	22	135	66
	144,500	286	25,230	17	157	55
1430 Kc						
KBRC-Mount Vernon, Wash.	16,748	182	6,928	41	122	67
KTUL-Tulsa, Okla.	345,437	3,250	100,209	29	2,691	83
WIRE-Indianapolis, Ind.	642,100	1,675	119,300	19	1,365	82
1460 Kc						
WBET-Brockton, Mass.	-	-	No increase due to existing stations			
WBNS-Columbus, Ohio	420,243	573	159,144	38	373	65
WHEC-Rochester, N. Y.	445,580	270	22,810	5	75	28
WMBR-Jacksonville, Fla.	235,991	186	18,530	8	110	59

Station	Present Nighttime Primary Service: Population	Present Nighttime Primary Service: Area (Miles²)	Loss of Nighttime Primary Service Under Proposal: Population	Loss of Nighttime Primary Service Under Proposal: Percent of Present Population	Loss of Nighttime Primary Service Under Proposal: Area	Loss of Nighttime Primary Service Under Proposal: Percent of Present Area
1470 Kc						
WOF-Flint, Mich.	209,734	165	28,678	14	97	59
WLAM-Lewiston, Maine	71,800	177	19,600	28	129	73
WMBD-Peoria, Ill.	243,230	1,010	70,010	29	800	79
1480 Kc						
WDAS-Philadelphia, Pa.	1,567,600	140	856,800	55	110	79
WLEE-Richmond, Va.	238,964	124	96,226	40	87	70
1500 Kc						
WTOP-Washington, D. C.	2,393,400	5,700	1,304,300	54	5,274	93
1510 Kc						
WLAC-Nashville, Tenn.	708,844	10,680	350,557	50	9,410	88
1530 Kc						
KFBK-Sacramento, Calif.	-	28,570	-	-	18,000	63
1560 Kc						
KPCM-Bakersfield, Calif.	—	-	None from existing stations.			
WQIR-New York, N. Y.	11,889,626	4,510	3,351,555	28	4,142	91
1590 Kc						
WAKR-Akron, Ohio	984,000	2,410	656,200	67	2,300	95
1600 Kc						
KBOR-Brownsville, Texas	-	-259	-	-	63	24

Station	Present Nighttime Primary Service		Loss of Nighttime Primary Service Under Proposal			
	Population	Area (Miles^2)	Population	Percent of Present Population	Area	Percent of Present Area
WWRL-Long Island, N. Y.	6,721,029	333	5,966,411	89	314	94

Note:

1/ Nighttime Service under Proposal: Where two sets of figures are shown, the upper set applies to the second hour of operation following sunset (or before sunrise) and the lower set applies to the first hour of operation following sunset.

2/ Basis of Determination: In each of these instances, the data was derived on the basis of the 0.1 mv/m contour.

APPENDIX III
UNLIMITED TIME STATIONS
Issue (e)

Station	Present Nighttime Secondary Service: Population	Present Nighttime Secondary Service: Area (Miles²)	Loss of Nighttime Secondary Service Under Proposal[1]: Population	Loss of Nighttime Secondary Service Under Proposal[1]: Percent of Present Population	Loss of Nighttime Secondary Service Under Proposal[1]: Area	Loss of Nighttime Secondary Service Under Proposal[1]: Percent of Present Area
640 Kc						
KFI-Los Angeles, Calif.	3,301,390	744,300	1,386,115	42	552,000	72
650 Kc						
WSM - Nashville, Tenn.	38,044,710 13,102,998	1,227,538 241,469	16,281,044 3,002,348	43 23	766,083 113,261	57 47
660 Kc						
WRCA - New York, N. Y.	26,127,000	528,700	26,127,000	100	528,700	100
680 Kc						
KNBC - San Francisco, Calif.	3,827,000	670,500	3,082,000	80.5	596,700	89
750 Kc						
WSB-Atlanta, Ga.	31,299,769	828,800	31,299,769	100	828,800	100
760 Kc						
WJR-Detroit, Mich.	29,449,275	710,939	29,449,275	100	710,939	100
770 Kc						
WABC-New York, New York	-	508,408	-	100	508,408	100
810 Kc						
WGY-Schenectady, New York	23,397,652	453,812	22,729,677	97	450,749	99.5
820 Kc						
WFAA/WBAP Dallas-Ft. Worth, Texas	-	-	-	100	-	100
850 Kc						
KOA-Denver, Col.	-	-	-	100	-	100

Station	Present Nighttime Secondary Service: Population	Present Nighttime Secondary Service: Area (Miles²)	Loss of Nighttime Secondary Service Under Proposal: Population	Loss of Nighttime Secondary Service Under Proposal: Percent of Present Population	Loss of Nighttime Secondary Service Under Proposal: Area	Loss of Nighttime Secondary Service Under Proposal: Percent of Present Area
870 Kc						
WWL-New Orleans, La.	32,712,380	-	31,719,889	97	-	-
890 Kc						
WLS-Chicago, Ill.	45,276,722	1,250,687	39,671,679	88	1,241,349	99.3
1020 Kc						
KDKA-Pittsburgh, Pa.	-	-	-	-	-	100
1030 Kc						
WBZ-Boston, Mass.	-	-	-	-	-	100
1040 Kc						
WHO-Des Moines, Iowa	-	-	-	100	-	100
1060 Kc						
WRCV-Philadelphia, Pa.	20,868,000	427,200	20,868,000	100	427,200	100
1080 Kc						
KRLD-Dallas, Texas	3,950,000	632,000	3,950,000	100	632,000	100
1090 Kc						
WBAL-Baltimore, Md.	6,258,306	138,273	6,258,306	100	138,273	100
KTHS-Little Rock, Ark.	10,809,784	572,484	10,809,784	100	572,484	100
1100 Kc						
KYW-Cleveland, Ohio	-	-	-	-	-	100
1110 Kc						
KFAB-Omaha, Nebr.	-	1,049,573	-	-	1,049,573	100
1120 Kc						
KMOX[17] - St. Louis, Mo.	-	-	-	-	-	-
	-	-	-	100	-	100

Station	Present Nighttime Secondary Service		Loss of Nighttime Secondary Service Under Proposal			
	Population	Area (Miles^2)	Population	Percent of Present Population	Area	Percent of Present Area
1140 Kc						
WRVA-Richmond, Va.	16,653,753	383,000	16,653,753	100	383,000	100
1160 Kc						
KSL-Salt Lake City, Utah	-	-	-	100	-	100
1170 Kc						
KVOO-Tulsa, Okla.	15,600,762	-	15,600,762	100	-	100
WWVA-Wheeling, W. Va.	8,516,456	-	8,516,456	100	-	100
1190 Kc						
KEX-Portland, Oregon	-	-	-	-	-	100
WOWO-Fort Wayne, Ind.	-	-	-	-	-	100
1210 Kc						
WCAU-Philadelphia., Pa.	30,167,942	-	30,167,942	100	-	-
1500 Kc						
WTOP-Washington, D.C.	12,165,100	270,000	2,312,000	19	50,900	19
1510 Kc						
WLAC- Nashville, Tenn.	28,114,293	852,655	28,114,293	100	852,655	100
1560 Kc						
WQXR-New York, N. Y.	20,080,117	159,000	20,080,117	100	159,000	100

NOTE:

1/ Nighttime Service under Proposal: Where two sets of figures are shown, the upper set applies to the second hour of operation following sunset (or before sunrise) and the lower set applies to the first hour of operation following sunset.

APPENDIX IV

Daytime stations are located in the following cities and towns which are within nighttime "white areas"; i.e., areas now receiving only secondary (skywave) service with no primary (groundwave) service at night.

ALABAMA	Population (1950)
Albertville	5,397
Alexander City	6,430
Atmore	5,720
Bay Minette	3,732
Calera	1,361
Carrollton	710
Clanton	4,640
Enterprise	7,288
Evergreen	3,454
Fayette	3,707
Flomanton	1,036
Foley	1,301
Geneva	3,579
Greenville	6,781
Hartselle	3,429
Hamilton	1,623
Jackson	3,072
Monroeville	2,772
Marion	2,822
Oneonta	2,802
Opp	5,240
Ozark	5,238
Piedmont	4,498
Pell City	1,189
Prichard	19,014
Roanoke	5,392
Tallassee	4,225
Thomasville	2,425
Tuskegee	6,712
Wetumpka	3,813
ARIZONA	
Holbrook	2,336
Sierra Vista	-
Shaw Law	-
ARKANSAS	
Berryville	1,753
Blytheville	16,234
Clarksville	4,343
Crossett	4,619
DeQueen	3,015
Harrison	5,542
Magnolia	6,918
Malvern	8,072
Morriltown	5,483
Newport	6,254
Osceloia	5,006
Pocahontas	3,804
Rogers	4,964
Searcy	6,024
Siloam Springs	3,270
Walnut Ridge	3,106
CALIFORNIA	
Alturas	2,819
Coalinga	5,539
Lampoe	-
COLORADO	
Cortez	2,680
Ft. Lupton	1,907
Glenwood Springs	2,412
Walsenburg	5,596
CONNECTICUT	
-	
DELAWARE	
Georgetown	1,923
DISTRICT OF COLUMBIA	
-	
FLORIDA	
Auburndale	3,763
Avon Park	4,612
Arcadia	4,764

FLORIDA (Cont')	Population (1950)
Belle Glade	7,219
Cocoa	4,245
Crestview	5,003
DeFuniak Springs	3,077
Eau Gallie	1,554
Fernandina Beach	554
Fort Walton Beach	2,463
Lake Wales	6,821
Live Oak	4,064
Naples	1,465
Panama City Beach	25,814
Riviera Beach	4,065
South Daytona	692
Titusville	2,604
Ward Ridge	-
GEORGIA	
Adel	2,776
Americus	11,389
Ashburn	2,918
Bainbridge	7,562
Baxley	3,409
Camilla	3,745
Cairo	5,577
Carrollton	7,753
Dawson	4,411
Dublin	10,232
Fitzgerald	8,130
Fort Valley	6,820
Hawkinsville	3,342
Jesup	4,605
McRae	1,904
Perry	3,849
Quitman	4,769
Swainsboro	4,300
Toccoa	6,781
Vidalia	5,819
Waynesboro	4,461
West Point	4,076
Warner-Robins	7,986
IDAHO	
Soda Springs	1,329
Rupert	3,098

ILLINOIS	Population (1950)
Anna	4,380
Carbondale	10,921
Carmi	5,574
Harvard	3,464
Litchfeld	7,208
Marion	10,459
Metropolis	6,093
Mt. Carmel	8,732
INDIANA	
-	
IOWA	
-	
KANSAS	
Chanute	10,109
Colby	3,859
Concordia	7,175
Ft. Scott	10,335
Goodland	4,690
Liberal	7,134
Pratt	7,523
Russell	6,483
KENTUCKY	
Barbourville	2,926
Benton	1,980
Cumberland	4,249
Fulton	3,224
Harlan	4,786
Manchester	1,706
Mayfield	8,990
Middlesboro	14,482
Neon	1,055
Prestonburg	3,585
Van Cleve	-
Whitesburg	1,393
LOUISIANA	
Abbeville	9,338
DeRidder	5,799
Ferriday	3,847
Haynesville	3,040
Homer	4,749
Lake Providence	4,123
Leesville	4,670

LOUISIANA (Cont')	Population (1950)
Marksville	3,635
Oakdale	5,598
Oakgrove	1,796
Rayville	3,138
Sulphur	5,996
Ville Plate	6,633
Tallulah	7,758
Vivian	2,426
Winnfield	5,629
Winnsboro	3,655
MAINE	
Caribou	4,500
Rumford	7,888
Skowhegan	6,183
Sanford	11,094
MARYLAND	
Pocomoke City	3,191
MASSACHUSETTS	
Orange	4,048
Southbridge	16,748
MICHIGAN	
Big Rapids	6,736
Gaylord	2,271
Hancock	5,223
Niles	13,145
Rogers City	3,873
St. Helen	-
MINNESOTA	
-	
MISSISSIPPI	
Amory	4,990
Batesville	2,463
Forest	2,874
Indianola	4,369
Hazelhurst	3,397
Houston	1,664
Kosciusko	6,753
Louisville	5,282
Leland	4,736

MISSISSIPPI (Cont')	Population (1950)
Magee	1,738
New Albany	3,680
Newton	2,912
Oxford	3,956
Waynesboro	3,442
MISSOURI	
Boonville	6,686
Branson	1,314
Caruthersville	8,614
Charleston	5,501
Dexter	4,624
Kennett	8,685
Malden	3,396
Mountain Grove	3,106
Marshall	8,850
Osage Beach	-
Thayer	1,639
Willow Springs	1,914
MONTANA	
-	
NEBRASKA	
Broken Bow	3,396
Holdrege	4,381
Lexington	5,068
McCook	7,678
Ogallala	3,456
NEVADA	
Fallon	2,400
NEW HAMPSHIRE	
Conway	1,238
Laconia	14,745
Rochester	13,776
NEW JERSEY	
-	
NEW MEXICO	
Deming	5,672
Grants	2,251
Lovington	3,134
Socorro	4,334
Tularosa	1,642

	Population (1950)
NEW YORK	
Elmira Heights	5,009
Hornell	15,049
Ithaca	29,257
Owego	5,350
Potsdam	7,491
Wellsville	6,402
NORTH CAROLINA	
Ahoskie	3,579
Ashsboro	7,701
Burlington	24,560
Clinton	4,414
Edenton	4,468
Elizabethtown	1,611
Elkin	2,842
Fairmont	2,319
Forest City	4,971
Franklin	1,975
Kings Mountain	7,206
Laurinburg	7,134
Lincolnton	5,423
Marion	2,740
Marshall	983
Mayodan	2,246
Morehead City	5,144
Morganton	8,311
N. Wilkesboro	4,379
Plymouth	4,486
Rockingham	3,356
Shelby	15,508
Spruce Pine	2,280
Southern Pines	4,272
Sylva	1,382
Tabor City	2,033
Tarboro	8,120
Thomasville	11,154
Tryon	1,985
Whiteville	4,238
Williamston	4,975
NORTH DAKOTA	
-	
OHIO	
Gallipolis	7,871
Wellston	5,691

	Population (1950)
OKLAHOMA	
Clinton	7,555
Guymon	4,718
Poteau	4,776
Pryor Creek	4,486
Tahlequah	4,750
OREGON	
Brookings	-
Coquille	3,523
Hermiston	3,804
Prineville	3,233
PENNSYLVANIA	
Berwick	14,010
Carlisle	16,812
Chambersburg	17,212
Clearfield	9,357
Corry	7,911
Coudersport	3,210
Emporium	3,646
Huntingdon	7,330
Kane	5,706
Lewisburg	5,268
Mexico	-
Milton	8,578
Nanticoke	20,160
Sayre	7,735
Stroudsburg	6,361
Tyrone	8,214
Warren	14,849
Waynesboro	10,334
RHODE ISLAND	
-	
SOUTH CAROLINA	
Abbeville	5,395
Aiken	7,083
Bamberg	2,954
Barnwell	2,005
Beaufort	5,081
Belton	3,371
Bishopville	3,076
Batesburg	3,169
Camden	6,986

SOUTH CAROLINA (Cont')	Population (1950)
Cheraw	4,836
Clinton	7,168
Conway	6,073
Darlington	6,619
Dillon	5,171
Easley	6,316
Fountain Inn	1,325
Gaffney	8,123
Hampton	2,007
Kingstree	3,621
Lake City	5,112
Laurens	8,658
Manning	2,775
Marion	6,834
Mullins	4,916
Seneca	3,649
Walterboro	4,616
SOUTH DAKOTA	
Pierre	5,715
Winner	3,252
TENNESSEE	
Church Hill	-
Covington	4,379
Dayton	3,191
Erwin	3,387
Etowah	3,261
Humbolt	7,426
Jonesboro	1,126
Lenior City	5,159
Martin	4,082
McKenzie	3,774
Milan	4,938
Newport	3,892
Ripley	3,318
Rogersville	2,545
Savannah	1,698
S. Pittsburg	2,573
Sweetwater	4,199

TEXAS	Population (1950)
Andrews	3,294
Atlanta	3,782
Big Lake	2,152
Brenham	6,941
Brownfield	6,161
College Station	7,925
Colorado City	6,774
Conroe	7,298
Dalhart	5,918
Dumas	6,127
Eagle Pass	7,276
El Campo	6,237
Falfurrias	6,712
Floydada	3,210
Kermit	6,912
Kingsville	16,898
Livingston	2,865
Post	3,141
Seminole	3,479
Shamrock	3,322
UTAH	
Vernal	2,845
VERMONT	
Springfield	4,940
St. Albans	8,552
VIRGINIA	
Bedford	4,061
Big Stone Gap	5,173
Blackstone	3,536
Crewe	2,030
Christiansburg	2,967
Emporia	5,664
Farmville	4,375
Gretna	803
Galax	5,248
Grundy	1,947
Leesburg	1,703
Lawrenceville	2,239
Marion	6,982
Narrows-Pearisburg	2,520 - 2,005
Mt. Jackson	732
Norton	4,315
Pennington Gap	2,090

	Population (1950)
VIRGINIA (Cont')	
Richlands	4,648
Rocky Mount	1,432
South Hill	2,153
Tasley	-
Warsaw	435
Warrenton	1,797
Wytheville	5,513
WASHINGTON	
Colville	3,033
Ephrata	4,589
Omak	3,791
Prosser	2,636
Quincy	804
WEST VIRGINIA	
Fisher	-
Keyser	6,347
Matewan	989
Moorefield	1,405
Oak Hill ille	4,518
Pineville	1,082
Ravenswood	1,175
Richwood	5,321
WISCONSIN	
Antigo	9,902
Beaver Dam	11,867
Black River Falls	2,824
Hartford	4,549
Neillsville	2,663
Sparta	5,893
Stevens Point	16,564
Sturgeon Bay	7,054
Viroqua	3,795
WYOMING	
Douglas	2,544

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington 25, D. C.

FCC 59-681
75011

In the Matter of	)	
	)	
Inquiry into the Advisability of	)	
Authorizing Standard Broadcast	)	
Stations to operate with Facilities	)	Docket No. 12729
Licensed for Daytime Operation from	)	
6:00 AM or Local Sunrise (whichever	)	
is earlier) to 6:00 PM or local	)	
Sunset (whichever is later).	)	

REPORT

By the Commission:

1. On January 12, 1959 the Commission instituted an inquiry pursuant to Section 403 of the Communications Act of 1934, as amended, in the above-entitled matter (FCC 59-11; 24 FR 375) with reference to the hours of operation of broadcasting stations licensed to broadcast during the daytime hours, i.e., between local sunrise and sunset. The Notice of Inquiry invited the filing of comments by interested parties concerning the service gains and losses which would result from permitting daytime stations to operate from 6:00 AM to 6:00 PM regardless of any nighttime skywave interference occurring during this time segment. The sixteen issues set forth in the Notice are attached as Appendix III. The time for filing comments was set for April 8, 1959 and was, upon petition, extended to May 8, 1959. Comments were filed by the later date.

2. Earlier the Commission had given consideration in a rule making proceeding (Docket No. 12274) to a petition of the Daytime Broadcasters Association[1] requesting that the rules be amended to license daytime stations to extend their broadcasting during such nighttime hours as may occur between 5:00 AM and 7:00 PM. Denying the petition, the Commission decision (FCC 58-891; 23 FR 7488, September 19, 1958) held the record conclusively demonstrated, in view of the tremendous losses which would result to the existing radio service throughout the United States from the operation contemplated by the petition as compared with the much smaller amount of new services which would be provided in some locations,[2] that the proposal

1/ The Daytime Broadcasters Association represents some 150 daytime radio stations throughout the United States.

2/ The Commission Report and Order announcing the decision found that: "The population which would gain service during these hours is vastly exceeded by the population which would lose the service of existing stations because of the additional interference which would result on all but a few of the 107 standard broadcast frequencies from the operation of daytime stations during the non-daytime hours (before sunrise and after sunset) contemplated by the proposal. The daytime stations so operating during non-daytime hours would generally serve only a very small fraction of the areas and populations which they serve during daytime hours, a fact which would sharply limit the gains

(continued on following page)

failed "to accord with the statutory standards governing radio broadcast services". Thereafter, the Inquiry herein was instituted simultaneously with a denial in part and dismissal in part (FCC 59-10) of the petitioner's request for reconsideration of that action. The petitioner's request for reconsideration had also requested, as an alternative to the earlier petition, the licensing of daytime stations to operate during such nighttime hours as may occur between 6:00 AM and 6:00 PM, the time segments considered herein.

3. Under the Communications Act of 1934, as amended, the Commission may, with certain exceptions not relevant here, grant licenses only upon written applications which are required to set forth, among other things, the hours of the day during which it is proposed to operate the station. Each initial license granted for a station and each renewal of license which is granted specifies the hours during which the station is authorized to operate and the hours so specified, with the exception of certain provisions of the existing rules as discussed below, are the maximum hours during which any station may be operated under its license. In accordance with Section 3.23 of the Rules, standard broadcast applications may now be filed and stations may be licensed for various hours of operation which include:

(1) Specified hours which permits operation during the exact hours specified in the license;

(2) Sharing time, which permits operation during the hours shared with one or more other stations using the same channel;

(3) Daytime, which permits operation during the hours between average monthly local sunrise and sunset;

(4) Limited time which permits operation during daytime and until local sunset if located west of the dominant station on the channel, or if located east thereof, until sunset at the dominant station and, in addition, during nighttime hours if not in use by the dominant station or stations on the channel; and

---

2/ (Continued from previous page:)
in service which would result. As a result of the additional interference so created, clear channel, unlimited time Class II and Class III stations would be limited in service so that in many instances they could not serve even all of the communities to which they are assigned. While a first nighttime primary service would be afforded to some population during these hours, and a first local service would be afforded to more than 900 communities in the nation, extensive 'white areas', in which the population would lose all nighttime primary service would be created. On virtually all of the clear channels all secondary service would be destroyed. Because of this destruction of secondary service (the only service received by some 20,000,000 persons in about one-half of the area in the United States) and vast impairment of primary service during the hours involved, service to rural areas would be lost. . ."

(5) Unlimited time, which permits operation without a maximum limit as to time.

4. Prior to April 13, 1940, the rules and regulations for the licensing of broadcasting stations (Section 84) which had first been promulgated by the Federal Radio Commission[3/] defined the term daytime as the period of time between 6:00 AM and local sunset. Thus the rules then provided that the broadcast day for daytime stations began at 6:00 AM. However, during the winter months, this was considerably prior to local sunrise, causing rather serious interference due to nighttime propagation conditions prevailing, while during the summer months sunrise occurred considerably before 6:00 AM. This rule was amended on April 13, 1940 (5 FR 1449), to specify local sunrise in place of 6:00 AM. However, Section 3.87 of the rules adopted June 10, 1940, contains provisions which permit program transmissions prior to local sunrise, beginning at 4:00 AM local standard time by daytime stations, except certain Class II stations, with their authorized daytime facilities where such operation does not cause undue interference. See Music Broadcasting Company v. Federal Communications Commission, 95 U.S. app. D.C. 12, 217 F. (2d) 339, 11 Pike & Fischer R.R. 2025 (1954); and In re Music Broadcasting Company, et al, 15 Pike & Fischer R.R. 547.

5. The differences in station interference between daytime and nighttime operation are well recognized, and comprehensive reference has been made thereto in the Notice of Inquiry. Briefly, and of greatest import here, skywave service and interfering signals are propagated over great distances respectively, at night on the clear and shared standard broadcast channels, as distinguished from the essential absence thereof during most daytime hours of the solar diurnal arc. This fundamental difference in natural radio conditions is an appropriate consideration in carrying out the provisions of the Communications Act which provide for efficient, fair, and equitable distribution of radio service.

6. The Notice of Inquiry stated with respect to the increasing number of daytime stations:

> "The licensing of daytime stations has increased from 84 in 1946 to approximately 1,400 in 1958. Approximately 650 applications seeking daytime facilities are pending, ranging in power up to 50 kw. In addition, more than 350 applications for unlimited time operation are pending which propose, by use of directional

3/ The rules which had been issued by the Federal Radio Commission were continued in effect by Section 604 of the Communications Act of 1934, as amended until modified, terminated, superseded, or repealed by the Commission or by operation of law.

antennas and reduced power, the avoidance of transmissions of interfering skywave signals during nondaytime hours. The filing of both kinds of applications is continuing at a substantial rate."

and:

"All parties are hereby placed on notice that the Commission in its deliberations on this matter will take into consideration the applications for new daytime and fulltime station."

The number of standard broadcast stations authorized as of March 1, 1959, listed by type of channel and hours of operation, is shown in the attached Appendix II.

7. Substantial engineering data were filed showing the service gains and losses. Much of the data have been tabulated and are attached as Appendix I.[4/] It shows that, if all present daytime stations were to extend their hours of operation from 6:00 AM to 6:00 PM there would be substantial losses of existing groundwave services, new white areas[5/] would be created in the vicinity of communities which are now served by unlimited time stations on the same frequencies, the resulting service areas of the daytime stations would be meager, and skywave service would be lost. While the losses would be most severe in rural and small urban communities a substantial number of regional stations would not even serve the entire community to which they are licensed. The effects of "6 to 6" operation do not differ appreciably, during the time segments involved, from the 5:00 AM to 7:00 PM operation considered in Docket No. 12274.

8. It is shown by the data that the interference to the present service would not terminate at 6 o'clock except for areas in the Pacific standard time zone even though the interfering stations ceased their operation at 6 o'clock local standard time.[5a/] This results from the time zone changes whereby 6 o'clock in the Central Time Zone is 7 o'clock Eastern Standard Time; 6 o'clock in the Mountain Time Zone is 8 o'clock Eastern Standard Time and 7 o'clock Central Standard Time; and 6 o'clock in the Pacific Time Zone is 9 o'clock Eastern Standard Time, 8 o'clock Central Standard Time, and 7 o'clock Mountain Standard Time. Thus, a station operating until 6 o'clock in the Pacific Standard Time Zone would transmit skywave interfering signals which would endure until 6 o'clock, 7 o'clock, 8 o'clock, or 9 o'clock, local time, depending upon the location of the service areas affected. Considering the operation of interfering stations in each time zone, the duration of interference to existing service would

---

4/ Data filed in other FCC proceedings, Docket Nos. 6741 and 12274 and in the standard broadcast station license files are also considered relevant and reliance has been placed thereon to the extent such data is either set forth herein or in the decision in Docket No. 12274.

5/ The time nighttime "white areas" is used to describe those areas receiving only skywave service with no groundwave service from any station during nighttime hours.

5a/ The transmission of skywave interfering signals from operations after local sunrise and before local sunset is considered in Docket No. 8333, The Daytime Skywave Proceeding.

thus extend from local sunset to 9 PM Eastern Time, 8 PM Central Time, 7 PM Mountain Time and 6 PM Pacific Time. The correlate of this sequence would occur during the pre-sunrise morning hours, beginning at 3 AM Pacific Time.

9. Data currently available are necessarily confined to interference resulting from the operation of existing stations. The prospective effects are necessarily somewhat speculative. The rate of increase of daytime stations and applications clearly shows a strong continuing demand and in addition the eventual lifting of the freeze will undoubtedly accelerate the filing of daytime applications. It thus appears, based on present licensing and reasonable expectancy of future development, that until 9 PM Eastern Standard Time all skywave service would be entirely destroyed[6/] and groundwave service severely limited on most of the 107 standard broadcast channels. (Only the six local channels would be unaffected).

10. The views and opinions expressed in the proceedings are substantially similar to those expressed earlier in Docket No. 12274. The Daytime Broadcasters Association, however, now urges "That the Commission -- on an interim and experimental basis -- authorize the operation of daytime only stations from 6 AM or local sunrise (whichever is earlier) to 6 PM or local sunset (whichever is later) for a period of two years." In support it is urged that the basic problem may in this manner be resolved "not by theoretical data but by the actual results". No reason appears, however, to question the accuracy of the physical and engineering data on which the Commission's rules are bottomed, and no further showing has been made to bolster the views expressed earlier that additional hours should be granted daytime stations on the basis of present need for local service despite the resulting interference.

11. Other parties commenting have made the point that the specified hours of operation now provided by Section 3.23 of the rules are not delimited to the daytime or nighttime hours. Thus applications filed under the existing rules may propose operation from 6 AM to 6 PM. It is urged that the present rules are thus entirely adequate for the determination on a case by case basis of the merits of any application proposing operation during these hours. The Commission could in this manner appropriately evaluate the extent of the service proposed and the interference which may

---

6/ Skywave service attaches as an incident of the urban economic support of stations which are so protected from interference as to render broadcasting service over extensive areas by means of skywave signals, and is the only nighttime standard broadcast service available to 25,631,000 persons, in 1,727,000 square miles, who do not receive nighttime groundwave service from any station. This area comprises somewhat more than half the land area of the United States (excluding Alaska and Hawaii). The basic cause for the absence of groundwave service in these areas is the nighttime inter-station interference which is encountered on the shared channels despite the following of engineering principles of allocation which include the use of directional antennas designed to minimise interference.

be caused. This, it is asserted, is necessary in any event in view of the fact that the merits of the present daytime operations have been evaluated solely under daytime transmission conditions with no other evaluation to meet the statutory tests for licensing.6a/

12. The Notice of Inquiry stated:

> In the pleadings and comments filed heretofore in Docket No. 12274, DBA and other advocates of extended hours for daytime stations have asserted that there is a large unsatisfied need for local service during pre-sunrise and post-sunset hours. Of particular significance, states DBA, is the fact that in the United States 913 communities, with a total population of more than 7,300,000, have available to them no locally licensed radio outlet other than daytime-only stations."

13. With further reference to the communities referred to in the Notice of Inquiry, one party filing comments supplied additional data secured through a more detailed study of the records publicly available which show that the problem concerning adequacy of nighttime radio service to the people residing in these communities is not so severe as might appear from a more cursory examination. The detailed data show that a count of the communities listed totals 912; that 357 or 39.1 percent with a population total of 1,761,622 do not receive nighttime groundwave service from any stations; that 218 or 23.9 percent with a population total of 1,684,026 receive nighttime groundwave service from one station; that 337 or 37 percent with a population total of 5,218,854 receive nighttime groundwave service from two or more stations; and that many of the communities are nearby suburbs of well-served metropolitan areas.

14. As there is no practicable basis for increasing the number of standard broadcast channels, the only way in which more stations could be accommodated to provide additional services during the additional hours would be to increase the number of stations on these channels or by extending the hours of existing daytime stations. Under the Communications Act, however, and in principle it is clear that such should not be done at the expense of the broadcasting services now being effectively rendered during these hours, which would result in a severe loss of broadcasting service to the public. This is not to say, of course, that local nighttime operation might not be licensed in various of these communities were applications to be filed proposing operation which meets the appropriate criteria with reference to interference and other considerations whereby the Commission might find that the nighttime operations proposed could serve the public

---

6a/ It would be necessary that proposals for nighttime operation be evaluated under the rules and standards applicable for determination of nighttime service and interference.

interest or could better serve the public interest than would other pending proposals.[1]

15. The Notice of Inquiry posed the consideration:

> "Would it be feasible for daytime stations, if operating after sunset, to reduce power sufficiently at sunset and before sunrise to limit interference to other stations to the daytime level? If so, how much service would be provided with such reduced radiation?"

The data, however, show that in the main the resulting interference would preclude the affording of a satisfactory measure of service by daytime stations if operating after sunset even with no reduction in power. Any substantial reduction in power during these hours designed to reduce the degree of the interference which would be caused to the groundwave service of unlimited time stations would further diminish the coverage of the daytime stations. The greater susceptibility of skywave service to interference and the great distances to which such service extends in the absence of interference makes exceedingly problematical any benefits which might be secured to skywave service through power reduction by the interfering stations. Thus it appears that power reduction poses only an extremely limited potential for alleviating the interference problem. Moreover, under the existing rules, Class II, III and IV stations may be licensed to operate with power as low as 0.25 kilowatts, 0.5 kilowatts, and 0.1 kilowatts, respectively and, with the exception of the Class IV stations, these stations may make use of directional antennas for the reduction of interference by limiting radiation in certain directions, although permitting full radiation in other directions in order to provide maximum service. Thus the provisions of the present rules appear adequate in this respect.

16. With reference to the proposal set out in paragraph 10 above, that experimental operation should be authorized during the time segments here considered, for a period of two years, and the view expressed in support thereof that an asserted deficiency in the Commission's licensing of hours of operation of standard broadcast stations would thereby be corrected; we believe it appropriate to observe that somewhat similar arguments of deficiency in the applicability of the Commission's rules and engineering

---

[1] It may be pointed out also that any complaints that existing fulltime stations have failed to devote a reasonable amount of broadcast time to meeting the needs of the areas and communities which now receive broadcast service from these licensees will be carefully considered by the Commission in connection with renewal proceedings relating to such stations. Under the Communications Act of 1934, as amended, standard broadcast stations are licensed for a term of three years and renewal of such licenses may be granted from time to time for a term not to exceed three years. In each instance the Commission grants the license only upon finding that the operation meets the statutory standard of public interest, convenience, or necessity.

standards for the licensing of stations[8/] have been made by some parties in other proceedings with reference both to the hours during the sun's nocturnal arc with which this proceeding is concerned and to other time segments of the broadcast day, and these arguments have been or will be ruled upon in those proceedings. Finally, we believe it appropriate to observe, in view of the broad and widespread nature of the suggestion which has been made for experimental operation, that in those cases where experimentation may be warranted and desirable, for reasons not present here, the experimentation should be appropriately limited in scope and duration and so pointed in purpose as to secure the desired data with a minimum of disruption of the existing radio services which are otherwise in the public interest. We believe the general and universal basis for experimental operation suggested here fails also to meet that standard.

17. In the issues pointing out a number of problems involved, in the Notice of Inquiry, several issues were designed to solicit meaningful consideration in certain areas which would be brought into focus only in the event that it should otherwise appear some extended hours of operation would be meritorious. Examples of these are the effects upon the CONELRAD operation, upon the development of FM broadcasting, and upon the operations of stations in other North American countries. These and other similar issues require no resolution in view of our decision herein.

18. The Notice of Inquiry posed for consideration:

> "(a) What effect would the new services gained have on reception of needed and valuable programs by persons who are advantaged by such reception, including emergency and weather information, farm information, national and local news, programs and announcements concerning local affairs and local organizations?"
> [For text of footnote see next page]
>
> "(b) What effect would the limitation of service through destructive interference have upon access to events of national and regional interest and to programs of a type which cannot be originated by local communities, and other needed and valuable transmissions now available under the existing allocation rules?"

8/ It is the intent and purpose of the rules and standards to provide, with due consideration of all the factors involved and of their complexity, criteria which can be generally applied under the Communications Act to proposed station assignments to determine their acceptability or non-acceptability for licensing in terms of acceptable or non-acceptable interference. As in the case of many other fields in which statistical methods are employed, the applicable interference criteria have resulted from a statistical analysis of a large number of recorded field intensity measurements accumulated over substantial periods of time. These criteria have been the subject of review from time to time to assure consonance with all scientific principles and all other known factors which may have a bearing on the licensing of broadcast stations.

"7/ We expressed the view in the Report and Order in Docket No. 12274 (par. 49) that the needs and advantages relating to programming were common to all radio service, and that 'any change in allocation rules which results in degradation of overall radio service results in less meeting of the various needs and provides for less of the advantages than at present'. We adhere to that view on the basis of the record made in that proceeding. But we wish to permit the presentation of any special facts as to the value of the programming of certain stations or kinds of stations which may be available; and accordingly we are including this among the issues herein. Data supplied along this line, as in other connections, should be specific and factual, rather than general and conclusionary."

19. Upon a careful review of the comments which have been filed, and a review of our decision in Docket No. 12274, we conclude that the losses of standard broadcast radio service, both groundwave and skywave in the various areas affected, which would result from an extension of the hours of operation of stations licensed for daytime operation must be determinative herein. We are unable to find an expression of any local need which is impossible of substantial fulfillment under existing rules for station licensing 2/ and which is so great or so pressing as to warrant widespread disruption of the existing radio service now enjoyed thereunder and relied upon daily by millions of citizens. Particularly, would it be undesirable and unwarranted to permit such disruption in those instances where the result as shown by the data would simply be the taking of regular service from rural farm areas and from small urban communities, which need radio vitally, and giving more stations -- serving less area -- to city and principal urban areas which are already relatively well supplied not only with standard broadcast radio programs but with other facilities for relaxation, intellectual stimulus, information and recreation. Moreover, this conclusion is strongly reinforced by a comparison of the 1,761,622 persons in 357 communities, now receiving only skywave service, who would gain in lieu thereof a local groundwave service, with the 25,631,000 persons in 1,727,000 square miles, now receiving skywave service, who would lose entirely the standard broadcast radio service now available to them.

20. On the basis of the data now available we find that there is no warrant for inaugurating rule making looking toward extended hours for daytime stations on a general or universal basis and we conclude that the Inquiry herein should be, and IT IS HEREBY TERMINATED.

FEDERAL COMMUNICATIONS COMMISSION

Mary Jane Morris
Secretary

Adopted: July 8, 1959

Released: July 8, 1959

2/ We here consider existing stations and prospective licensing of new stations.

(over)

61808 O—60—8

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Service (*Indicates Loss): Population	Resulting Gain or Loss of Service (*Indicates Loss): % 6/	Resulting Gain or Loss of Service (*Indicates Loss): Area (Miles²)	Resulting Gain or Loss of Service (*Indicates Loss): % 6/	Resulting Gain or Loss of Service (*Indicates Loss): mv/m 5/	Coverage of Urban Community. 7/ Notes
ALABAMA											
Mobile	WKAB (1 kw D 840 kc (clear 1-A))										CST
Jan.-Dec.		day	247,375	1,952	0.5						
Dec.	6:45 - 5:00	5:00 pm (1)				184,411	74.5	60	3.0	11.2	
		6:00 pm (1)				142,509	57.6	32	1.6	27.8	no
Montgomery	WCOV ((1 kw N/10D DA-2 U 1170 kc (clear 1-B))										CST
Jan.-Dec.		day	251,454	1,505	0.5						
Dec.	6:45 - 4:45	6:00 pm (1) (2)	135,525	970	1.85	*7,905	5.8	*299	30.9	2.54 40.0	no
		7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					
CALIFORNIA											
Avalon	KBIG (10 kw D 740 kc (Canada clear 1-A))										nr.Los Angeles
Jan.-Dec.		day	3,192,615	10,805	0.5						PST
Dec.	6:45 - 4:45	4:45 pm (1)				201,116	0.63	217	2.0	19.7	
		5:00 pm (1)				1,730	0.05	53	0.5	29.1	
		6:00 pm (1)				1,680	0.05	25	0.2	79.3	no
Bakersfield	KERN (1 kw U 1410 kc (regional))										PST
Jan.-Dec.		day	130,300	4,300	0.5						
Dec.	7:00 -4:45	6:00 pm (2)	143,970	1,303	1.9	*40,349	28	*1,089	84	10.9	
Bakersfield	KPMC (10 kw U DA-1 1560 kc (clear 1-B))										PST
Jan. - Dec.		day	180,449	10,240	0.1						
Dec.	7:00 - 4:45	6:00 pm (1)				*891,000	100	*171,000	100	2.6	Skywave

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Service (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
Calif.(cont'd)											
Fresno	KMJ (5 kw U 580 kc (regional)										PST
Jan.-Dec.		day	1,324,700	42,800	0.5						
Dec.	7:00 - 4:45	4:45 pm (1)	1,583,840	32,080	1.04	*214,200	13.5	*2,770	8.6	1.3	
		(2)				*962,550	60.7	*13,290	58.6	3.5	
		5:00 pm (1)	1,227,530	28,290	1.36	*109,820	8.9	* 3,160	11.2	1.57	
		(2)				*721,900	58.8	*18,310	64.7		
		6:00 pm (1)	1,020,670	21,810	1.88	*279,400	27.4	* 5,740	26.3	2.82	
		(2)				*279,400	27.4	*5,740	26.3	2.82	
Los Angeles	KFI (50 kw U 640 kc (clear 1-A))										PST
Jan.-Dec.		day	3,995,395	35,953	0.1						
Mar.	6:00 - 6:00	6:00 am (1)				*146,333	2.67	*14,896	42.3	0.98	0.5 gw
		6:30 am (1)				*94,722	1.7	* 8,976	25.5	0.68	0.5 gw
Dec.	6:45 - 4:45	6:00 am (1)				*183,425	3.35	*117,445	49.5	1.21	0.5 gw
		7:00 am (1)				*134,642	2.46	* 13,741	39.0	0.875	0.5 gw
		7:30 am (1)				* 25,631	0.47	* 3,894	11.1	0.559	0.5 gw
Sept.-Mar.		3:00-6:00 am(1)				Loss of all skywave service 8/					
Modesto	KBEE (1 kw U DA-2 970 kc (regional))										PST
Jan.-Dec.		day	282,677	5,808	0.5						
Dec.	7:15 -4:45	6:00 pm (2)	85,253	413	10.18	*23,653	28	*104	25	15.1	
Sacramento	KFBK (50 kw U DA-1 1530 kc (clear 1-B))										PST
Jan.-Dec.		day	1,018,000	15,000	0.5	Note: "would completely destroy the skywave service. . .would limit groundwave service to the 2.5 mv/m contour . . .commencing three and one-quarter hours before sunrise at Sacramento."					
San Francisco	KCBS (50 kw U DA-2 740 kc (Canada clear 1-A))										PST
Jan.-Dec.		day	2,558,657	33,620	0.1						
Dec.	7:15 - 4:45	4:45 pm (1)	3,361,120	18,636	1.25	*168,613	5.0	*7,037	38	2.60	
		5:00 pm (1)	3,321,969	16,767	1.47	*212,747	6.4	*6,788	40	3.46	
		6:00 pm (1)	3,268,035	14,588	1.90	*490,566	15	*8,563	59	7.41	

Note: See last page for foot notes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Service * Indicates Loss: Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
CALIF.(cont'd)											
San Francisco	KNBC (50 kw U 680 kc (clear 1-B))										
Dec.	7:15 - 4:45	4:00 pm				* 83,000		*19,500			
		5:00 pm				*437,000		*67,700			
		6:00 pm				*618,000		*80,400			
						loss of all skywave service 8/					

Nearby counties affected by loss of KCBS service. More distance counties are not listed. California:

Napa	San Mateo	Solano		
Sacramento	Santa Clara	Sonoma		
San Joaquin	Santa Cruz	Stanislaus		

Nearby counties affected by loss of KNBC service. Other more distant counties not listed. California:

Amador	Eldorado	Mariposa	Nevada	Yuba
Butte	Fresno	Mendocino	Placer	
Calaveras	Lake	Merced	San Benito	
Colusa	Madera	Monterey	Tuolumne	

COLORADO											
Denver	KOA (50 kw U 850 kc (clear 1-B))										MST
Jan.-Dec.		day	205,000	0.1							
Dec.	715 - 4:30	5:30 pm (2)						*184,500	90	3.8	
		6:30 pm (2)									
		7:00 pm (2)									
						Loss of all skywave service 8/					
CONNECTICUT											
New Britain	WKNB (1 kw D 840 kc (clear 1-A))										EST
Jan. - Dec.		day	647,444	2,290	0.5						
Dec.	7:15 - 4:15	4:15 pm (1)				573,301	88.5	706	30.8	1.81	
		4:30 pm (1)				443,041	68.4	394	17.2	2.86	
		5:00 pm (1)				230,160	35.5	191	8.3	6.6	
		6:00 pm (1)				97,426	15.0	61	2.6	17.1	

Note: See last page for foot notes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Service (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
DELAWARE											
Wilmington	WDEL (5 kw U DA-2 1150 kc (regional))										EST
Dec.	7:15 - 4:45	6:00 pm (1)	332,869	672	2.92	*135,459	40.7	*548	81.5	12.39	no
		7:00 pm (2)				from CST stations 8/					
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
Nearby counties affected by loss of WDEL service. Others more distant not listed. Delaware: New Castle New Jersey: Salem Pennsylvania: Delaware											
DISTRICT OF COLUMBIA	WWDC (5kw U DA-2 1260 kc (regional))										EST
Jan.-Dec.		day			0.5						
Dec.	7:15-4:45	5:00 pm (1)	900,000	123	7.10	*105,000	12	*26	21	9.32	
		(2)				*340,000	38	*25	20	13.7	
		6:00 pm (1)	1,152,000	295	2.58	*667,000	58	*241	82	17.12	
		(2)				*932,000	81	*245	83	26.88	no
		7:00 pm (1)	1,155,000	298	2.56	*287,000	25	*186	62	7.90	
		(2)				*577,000	50	*234	79	14.60	
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
	WTOP (50 kw U DA-2 1500 kc (clear 1-B))										
Jan.-Dec.		day			0.1						EST
Dec.	7:15 - 4:45	6:00 pm (1)	(0.5 gw)					*3,500			(1,160 becomes white area) (2,340 becomes gray area)
		7:00 pm (1)	(skywave)			*2,312,000		*50,900			(Interference from KTXO only, 250 w Sherman, Texas)
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
						loss of all skywave service 8/					

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Service (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
DISTRICT OF COLUMBIA (Cont'd)											
	WRC kw U DA-N 980 kc (regional))										EST
Dec.	7:15 - 4:45	5:00 pm (1)				*52,600		*270			no
		6:00 pm (1)				*191,400		*630			
		7:00 pm (2)				from CST stations 8/					
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
Nearby counties affected by loss of WRC service. Others more distant not listed.											
Maryland: Montgomery, Prince Georges						Virginia: Arlington, Fairfax					
GEORGIA											
Atlanta	WSB (50 kw U 750 kc (clear 1-A))										EST
Jan.-Dec.		day	3,194,002	68,300	0.1						
Dec.	7:30 - 5:30	4:45 pm (1)				*120,636	8.83	*3,394	15.57	0.57	0.5 gw
		5:00 pm (1)				*355,023	25.97	*10,680	49.0	0.89	0.5 gw
		6:00 pm (1)				*744,920	54.5	*19,243	88.29	3.59	0.5 gw
		7:00 pm (1)				*417,900	30.57	*12,236	56.14	1.01	0.5 gw
		8:00 pm (1)				from MST stations 8/					
		9:00 pm (1)				from PST stations 8/					
						loss of all skywave service 8/					

Note: The above excludes consideration of WHEB, Portsmouth, New Hampshire, KMMJ, Grand Island, Nebraska, and KXL, Portland, Oregon; which operate limited time on 750 kc.

Nearby counties affected by loss of WSB service. Other more distant counties are not listed. Georgia:

Bartow	Fayette	Henry
Cherokee	Forsyth	Newton
Douglas	Givinett	Paulding

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

(See last page for footnotes)

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	PRESENT SERVICE Population	Area (Miles²)	mv/m 5/	Resulting Gain or Loss of Services * Indicates Loss Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community 7/ Notes
ILLINOIS											
Centralia	WCNT (1 kw D 1210 kc (clear 1-A))										CST
Jan.-Dec.		day	189,825	5,720	0.5						
Dec.	7:00 - 4:30	4:45 pm (1)				27,095	14.2	171	3.0	12.9	
		5:00 pm (1)				24,600	13.0	132	2.3	17.2	
		6:00 pm (1)				21,393	10.7	99	1.7	21.8	
Chicago	WAIT (5 kw SH 820 kc (clear 1-A))										CST
	WCBD (5 kw SH 820 kc (clear 1-A))										
Jan.-Dec.		day	5,724,707	16,778	0.5						
Dec.	7:15 - 4:45	4:15 pm (1)				4,933,763	86.1	2,953	17.6	3.6	
		5:00 pm (1)				3,315,905		1,070	6.38	10.7	
		6:00 pm (1)				1,359,891	23.8	490	2.92	2.	no
Chicago	WLS (50 kw U 890 kc (clear 1-A))										CST
Mar.	6:00 - 6:00					No data filed - see December					
Dec.	7:15 - 4:15	4:00 pm (1)			0.65						
		5:00 PM (1)			1.0					2.25	
		6:00 pm (1)							*77	9.45	0.5 gw
		7:00 pm (1)									
		8:00 pm (1)				from MST stations 8/					
						from PST stations 8/					
						* 1,500,00 100					
						Loss of all skywave service 8/					
Effingham	WCRA (250 W D 1090 kc (clear 1-B))										
Jan.-Dec.	7:00 - 4:30	6:00 pm (1)	113,188	3,990	0.5						
						9,071	8.0	95	2.4	167	Approx. yes
Peoria	WMBD (5 kw U DA-2 1470 kc (regional))										CST
	"night" (1)		243,230	1,010	3.2	*70,010	29	*800	79	14.7	yes
Dec.	7:15-4:30	7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					
Mattoon	WLBH (250 D 1170 kc (clear 1-B))										CST
Jan.-Dec.		day	111,659	2,870	0.5						
Dec.	7:00 - 4:30	6:00 pm (1)				40,030	36	490	17	2.68	no

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

EXTENT OF PRESENT GROUND-WAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	PRESENT SERVICE Population	Area (Miles²)	mv/m 5/	Resulting Gain or Loss of Services * Indicates Loss Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
ILLINOIS (cont'd)											
Nearby counties affected by loss of WIRD service. More distant counties are not listed. Illinois: Peoria, Tazewell, Woodford											
INDIANA											
Evansville	WIKY (250 w D 820 kc (clear 1-A))										CST
Jan.-Dec.		day	382,451	6,164	0.5						
Dec.	7:00 - 4:30	4:30 pm (1)				224,766	58.7	301	4.8	6.8	
		5:00 pm (1)				143,884	37.6	105	1.7	13.7	
		6:00 pm (1)				87,748	22.9	28	0.45	30.1	
Indianapolis	WFBM (5 kw U DA-N 1260 kc (regional))										CST
Mar.	6:00 - 5:45					Data not filed; see December					
Dec.	7:00 - 4:15	4:00 pm (1)			3.8					3.3	
		5:00 pm (1)			5.6					10.6	
		6:00 pm (1)			1.7					13.4	
		7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					
Indianapolis	WISH (1 kw N/5 D U DA-N 1310 kc (regional))										
Mar.	6:00 - 5:45					Data not filed; see December					
Dec.	7:00 - 4:15	4:15 pm (1)	492,750	372	7.7	*71,852	14.6	*175	47.1	13.8	no
		5:00 pm (1)	511,795	452	6.4	*311,426	60.8	*360	79.7	25.6	
		6:00 pm (1)	527,446	588	6.0	*154,389	29.5	*426	72.6	16.0	
		7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					
IOWA											
Davenport	KSTT (1 kw U DA-2 1170 kc (clear 1-B))										CST
Jan.-Dec.		day	387,872	9,169	0.5						
Dec.	7:15 - 4:30	6:00 pm (1) (2)	226,357	890	1.55	*42,608	19	*527	59.2	3.94 52	
		7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					

Note: See last page for footnotes

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
IOWA (cont'd)											
Des Moines	WHO (50 kw U 1040 kc (clear 1-A))										CST
Jan.-Dec.		day			0.1						
Dec.	7:30 - 4:45	5:15 pm (1)				*1,014,032	41.2	*42,970	55.1	1.5	0.5 gw
		6:00 pm (1)				*1,437,181	58.5	*57,213	73.4	2.96	0.5 gw
		7:00 pm (1)				from MST stations 8/					
		8:00 pm (1)				from PST stations 8/					
						loss of all skywave service 8/					
Waterloo	KWMS (1 kw D 1090 (clear 1-B)										CST
Jan.-Dec.		day	338,274	9,025	0.5						
Dec.	7:30 - 4:30	6:00 pm (1)				5,885	1.7	25	0.28	54.6	approximate no
Nearby counties affected by loss of WHO service. Other more distant counties not listed. Iowa:											
Adams	Butler	Davis	Johnson	Missouri:							
Audubon	Calhoun	Franklin	Ringgold	Mercer							
Benton	Carroll	Humboldt	Washington	Putman							
Black Hawk	Cass	Jefferson	Wright								
KANSAS											
Topeka	WIBW (5 kw S DA-N 580 kc (regional))										CST
Dec.	7:30 - 5:00	6:00 pm (1)	574,707	21,198	3.07	*443,790	77	*19,218	91	14.7	approximate
Nearby counties affected by loss of WIBW service. Others more distant not listed. Kansas:											
Anderson	Douglas	Jackson	Osage								
Coffey	Franklin	Jefferson	Wabaunsee								
KENTUCKY											
Louisville	WHAS (50 kw U 840 kc (clear 1-A))										CST
Jan.-Dec.		day	9,200,139	153,744	0.1						
Dec.	7:00 - 4:30	3:15 pm (1)				*2,183,552	23.7	*43,440	28.2	0.19	
		3:30 pm (1)						*77,856	50.6	0.34	
		4:00 pm (1)				*5,583,498	60.6	*111,104	72.2	0.74	
		5:00 pm (1)				*2,060,651	49.5	*41,479	71.8	2.7	0.5 gw
		6:00 pm (1)				*2,134,645		*42,346	73.3	3.7	0.5 gw
		7:00 pm (1)				from MST stations 8/					
		8:00 pm (1)				from PST stations 8/					
						loss of all skywave service 8/					

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAIN AND LOSSES.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAIN AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
KENTUCKY (cont'd)											
Nearby counties affected by loss of WHAS service. Other more distant counties are not listed. Kentucky: Boone, Bourbon, Bracken, Campbell, Casey, Clark, Garrard, Hardin, Harrison, Kenton, Larue, Lincoln, Madison, Marion, Meade, Pendleton, Robertson. Indiana: Crawford, Dearborn, Jackson, Jennings, Ripley, Washington											
LOUISIANA											
New Orleans	WWL (50 kw U 870 kc (clear 1-A))										
Jan.-Dec.		day			0.1						CST
Dec.	6:45 - 5:00	6:00 pm (1)	32,813,160	1,277,000		*31,312,748	96	*1,276,724	99.9	1.0	groundwave and
		7:00 pm (1)				*31,014,589	95	*1,276,645	99.9	0.59	skywave
		8:00 pm (1)				*31,014,589	95	*1,276,645	99.9	0.59	
						loss of all skywave service 8/					
MARYLAND											
Baltimore	WBAL (50 kw U DA-N 1090 kc (clear 1-B)										EST
Jan.-Dec.		day			0.1						
Dec.	7:15 - 4:45	6:00 pm (1)	groundwave			*909,501	41.7	*8,910	91.3	7.15	approximate
		(1)	skywave			*6,258,306	100	*138,273	100	7.15	rural
		7:00 pm (2)				from CST stations 8/					
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
						loss of all skywave service 8/					

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location; and month. 1/	Station; sunrise-sunset time.2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community.7 Notes
MARYLAND (cont'd)											
Baltimore	WBAL	(1 kw D 750 kc (clear 1-A))									EST
Jan-Dec		day	1,409,792	5,558	0.5						
Dec	7:15-4:45	4:45 pm(1)				1,062,031	75	965	17.36	3.3	
		5:00 pm(1)				1,009,430	71.6	529	9.2	5.18	
		6:00 pm(1)				749,208	53.1	109	1.96	19.6	
Baltimore	WFBR	(5 kw U DA-1 1300 kc (region))									EST
Jan-Dec		day	1,170,587	2,325	0.5						
Dec	7:15-4:45	(1)	1,345,390	1,226	1.8	* 187,723	14	*961	78	13.3	1 hr. after /sunset
		(2)				* 420,623	31	*1964	87	16.9	no
		6:00 pm(2)				from EST stations 8/					
		7:00 pm(2)				from CST stations 8/					
		8:00 pm(2)				from MST stations 8/					
		9:00 pm(2)				from PST stations 8/					
Bethesda	WUST	(250 w D 1120 kc (clear 1-A))									nr. Washing-/ton, D.C.
Jan-Dec		day	826,419	716	0.5						EST
Dec	7:15-4:45	4:45 pm(1)				258,904	31	88	12	4.06	
		5:00 pm(1)				135,124	16	59	8.2	6.00	
		6:00 pm(1)				29,867	3.5	16	2.2	18.9	no

Nearby counties affected by loss of WBAL service. Other more distant counties not listed. Maryland:
Anne Arundel, Baltimore, Calvert, Caroline, Carrol, Cecil, Dorchester, Harford, Howard, Kent, Prince Georges, Queen Annes, Talbot, Wicomico
Delaware: Kent, New Castle, Sussex
New Jersey: Cumberland, Salem
Pennsylvania: Chester, Lancaster, York

Note: Loss of WBAL service would cause 29 cities and towns to become "white areas."

Nearby counties affected by loss of WFBR service. Other more distant counties not listed. Maryland:
Anne Arundel, Baltimore, Harford, Howard, Kent, Queen Annes

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINES AND LOSSES.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINES AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Lose): Population	% 6/	Area (Miles²) & 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
MASSACHUSETTS										
Boston	WBZ (50 kw U DA-1	(clear 1-A))								EST
Jan.-Dec.			7,981,000		0.1					
Mar.	6:00 - 5:45	7:00 pm (1)				*480,000			.22	from CST /stations
Dec.		6:00 pm (1)				*894,000			.49	from CST /stations
		7:00 pm (1)				*1,435,000			1.87	
		8:00 pm (1)				from MST stations 8/				
		9:00 pm (1)				from PST stations 8/				
						loss of all skywave service 8/				
Boston	WEEI (5 kw U DA-N day	1260 kc (regional))			0.5					EST
Jan.-Dec.										
Mar.	6:00 - 5:15					Data not filed; see December.				
Dec.	7:00 - 4:15	6:00 pm (1)	2,286,950	844	1.01	*1,544,760	68	*782 93	14.6	
		(2)				*1,826,190	80	*794 94	18.1	
		7:00 pm (1)	2,234,280	702	1.27	*283,610	13	*336 48	2.74	
		(2)				*722,340	32	*518 74	5.8	
		8:00 pm (2)				from CST stations 8/				
		9:00 pm (2)				from PST stations 8/				
Boston	WILD (1 kw D 1090 kc (clear 1-B)									
Jan.-Dec.	day		1,865,111	1,345	0.5					
Dec.	7:00 - 4:15	6:00 pm (1)				98,425	5.3	7 0.5	66	approximate ns
MICHIGAN										
Dearborn	WKMH (5 kw U DA-2	1310 kc (regional))								EST
Jan.-Dec.	day				0.5					
Dec.	8:00 -5:00	6:00 pm (1)	1,249,836	398	8.9	*808,416	65.	*268 67	22.2	ns
		(2)				*685,049	55.	*221 56	24.9	

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1	Station; sunrise-sunset time. 2	Time; and mode of change. 3/ 4/	Present Service: Population	Area (Miles²)	mv/m 5/	Resulting Gain or Loss of Services (* Indicates Lose): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
MICHIGAN (cont'd)											
Detroit	WJR (50 kw U 760 kc (clear 1-A))										EST
Jan.-Dec.		day			0.1						
Dec.	8:00 - 5:00	5:00 pm (1)				*960,647	10.6	*13,854	25.4	1.1	0.5 gw
		6:00 pm (1)				*2,739,937	30.3	*36,645	67.3	3.9	0.5 gw
		7:00 pm (1)				from CST stations 8/					
		8:00 pm (1)				from MST stations 8/					
		9:00 pm (1)				from PST stations 8/					
						loss of all skywave service 8/					
Detroit	WWJ (5 kw U DA-N 950 kc (regional))										EST
Jan.-Dec.		day			0.5						
		"night"			2.76					13.5	
Muskegon	WMUS (1 kw D 1090 kc (clear 1-E))										
Jan.-Dec.		day	141,540	985	0.5						
Dec.	8:15 - 5:15	6:00 pm (1				*56,228	40.	77	7.8	11.	approximate no
Saginaw	WKNX (1 kw D 1210 kc (clear 1-A))										EST
Jan-Dec.		day	460,045	5,260	0.5						
Dec.	8:00-5:00	5:00 pm(1)				113,815	25	121	2.3	18.0	no
		6:00 pm(1)				102,658	22	45	0.86	13.2	

Nearby counties affected by loss of WJR service. Other more distant counties are not listed. Michigan:
Genesee Jackson Shiawassee Ohio: Huron Seneca
Hillsdale Lapeer Ashtabula Defiance Lorain Williams
Ingham Sanilac Crawford Hancock Putman

MISSOURI											
St. Louis	KMOX (50 kw U 1120 kc (clear 1-A))										CST
Jan.-Dec.		day	3,859,917	75,144	0.1						
Mar.	6:15 - 6:00	5:15 pm (1)	2,724,828	34,318		*1,135,089	29	*40,826	54	0.52	yes
		6:00 pm (1)	2,259,262	16,822		*1,600,655	41	*58,322	78	1.45	
Dec.	7:15 - 4:45	3:45 pm (1)	2,870,166	39,765		*989,751	26	*35,379	47	0.39	
		4:00 pm (1)	2,691,988	32,390		*1,167,729	30	*42,754	57	0.58	
		5:00 pm (1)	2,126,322	13,086		*1,733,595	45	*62,058	83	2.05	rec. 0.1 mv/m
						*625,380	23	*21,980	63	2.05	rec. 0.5 mv/m
		6:00 pm (1)	1,988,259	9,592		*1,871,658	48	*65,552	87	3.07	rec. 0.1 mv/m
						*763,443	28	*25,474	73	3.07	rec. 0.5 mv/m

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
MISSOURI (cont'd)											
St. Louis KMOX		7:00 pm (1)				from MST stations 8/					
Dec. (cont'd)		8:00 pm (1)				from PST stations 8/					
Nearby counties affected by loss of KMOX service.						loss of all skywave service 8/					
More distant counties are not listed: Missouri: Franklin, St. Francois, Illinois: Clay, Cumberland, Jefferson, Moultrie, Sagamon; Lincoln, Warren, Coles, Jackson, Macon, Perry, Scott; Perry, Washington, Jasper, Morgan, Pike, Wayne											
NEBRASKA											
Omaha	KFAB (50 kw U DA-N 1110 kc (clear 1-B))										
Dec.	7:45 - 5:00	9:00 pm (1)				from PST stations 8/					CST
						loss of all skywave service 8/					
Omaha	KOWH (0.5 kw D 660 kc (clear 1-A))										CST
Jan.-Dec.		day	1,068,000	30,800	0.5						
Dec.	7:45 - 5:00	5:00 pm (1)				390,000	37	2,040	6.6		no
		6:00 pm (1)				345,000	32	790	2.6		
Omaha	WOW (5 kw U 590 kc (regional))										CST
Jan.-Dec.		day			0.5						
Dec.	7:45 - 5:00	6:00 pm (1)								6.1	
NEVADA											
Reno	KOH (1 kw N/5D DA-N U 630 kc (regional))										
Jan.-Dec.		day			0.5						
Dec.	7:15 - 4:30	6:00 pm (2)	91,610	3,260	2.11	*41,970	46	2,050	63	12.36	
NEW YORK											
Buffalo	WGR (5 kw U DA-N 550 kc (regional))										EST
Jan.-Dec.					0.5						
Dec.	7:45 - 4:45	6:00 pm (1)	1,119,560	2,380	2.36	*102,700	9	*1320	55	7.07	
		(2)				*186,660	17	*1,500	63	12.9	no
		7:00 pm (2)				from CST stations 8/					
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINES AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community 7/ Notes
NEW YORK (cont'd)											
Buffalo	WWOL (1 kw D 1120 kc (clear 1-A)										EST
Jan.-Dec.		day	964,485	3,192	0.5						
Dec.	7:00 - 4:45	4:45 pm (1)				800,433	83	638	20	3.63	
		5:00 pm (1)				756,610	78	405	13	5.4	
		6:00 pm (1)				392,962	41	125	4	19.1	no
New York	WQXR (50 kw U DA-1 1560 kc (clear 1-B))										EST
Jan.-Dec.		day			0.1						
Dec.	7:15 - 4:30	6:00 pm (1)				*5,190,000					
		7:00 pm (1)				*5,190,000					
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
						loss of all skywave service 8/					
New York	WRCA (50 kw U 660 kc (clear 1-A))										EST
Jan.-Dec.		day			0.1						
Dec.		5:15 pm (1)								2.2	
		6:00 pm (1)				*5,866,000		47,700		4.75	
		7:00 pm (1)				*2,445,000		34,700		0.68	
		8:00 pm (1)				from MST stations 8/					
		9:00 pm (1)				from PST stations 8/					
						loss of all skywaves service 8/					

Nearby counties affected by loss of WRCA service. Other more distant counties not listed. New York: Rockland, Westchester. New Jersey: Hunterdon, Morris, Ocean, Passaic. Connecticut: Fairfield, New Haven.

NORTH CAROLINA											
Tarboro	WCPS (1 kw D 760 kc (clear 1-A))										EST
Jan.-Dec.		day	217,122	2,922	0.5						
Dec.	7:15 - 5:00	5:00 pm (1)				21,611	9.95	232	7.94	7.04	
		6:00 pm (1)				12,589	5.80	53	1.81	23.6	
Wadesboro	WADE (1 kw D 1210 kc (clear 1-A))										EST
Jan.-Dec.		day	64,420	1,430	0.5						
Dec.	7:15 - 5:15	5:00 pm (1)				5,223	6.2	36	2.5	18.4	
		5:30 pm (1)				4,816	5.7	28	2.2	22.2	
		6:00 pm (1)				4,168	4.9	15	1.05	38.70	

Note: PST 1 station.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINES AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage of Urban Community. 7/ Notes
OHIO											
Cleveland	KYW (50 kw U DA-1 1100 (class 1-A))										EST
Jan.-Dec.		day	8,578,000		0.1						
Dec.	7:45 - 5:00	5:00 pm (1)				*4,372,000				0.84	
		6:00 pm (1)				*5,266,000				2.58	
		7:00 pm (1)				from CST stations 8/					
		8:00 pm (1)				from MST stations 8/					
		9:00 pm (1)				from PST stations 8/					
						loss of all skywave service 8/					
Columbus	WOSU (5 kw L 820 kc (clear 1-A))										EST
Jan.-Dec.		day	382,451	6,164	0.5						
Dec.	7:45 - 5:15	5:30 pm (1)				224,766	58.7	301	4.8	6.8	
		6:00 pm (1)				143,884	37.6	105	1.7	13.7	
Dayton	WAVI (250 w D 1210 kc (clear 1-A))										EST
Jan.-Dec.		day	599,182	2,880	0.5						
Dec.	7:45 - 5:15	5:00 pm (1)				299,023	50	58	2.0	15.9	
		5:15 pm (1)				222,162	37	34	1.2	21.4	no
		6:00 pm (1)				133,974	22	17	0.6	35.2	
Dayton	WING (5 kw U DA-N 1410 kc (regional))										
Jan.-Dec.		day			0.5						
Dec.	7:45 - 5:15	6:00 pm (2)	593,280	1,926	2.03	*239,980	40	*1,597	83	18.15	
		7:00 pm (2)	559,930	1,590	2.53	*247,800	44	*1,313	83	15.34	
		8:00 pm (2)				from MST stations 8/					
		9:00 pm (2)				from PST stations 8/					
OKLAHOMA											
Oklahoma City	WKY (5 kw U DA-N 930 kc (regional))										CST
Dec.	7:30 -5:15	5:15 pm (1)	860,420	16,800	2.40	*211,907	24.6	*6,300	37.5	3.8	
		6:00 pm (1)	675,341	11,400	3.52	*207,325	30.7	*6,900	60.5	7.6	
		7:00 pm (1)	956,641	19,790	1.97	*345,271	36.1	*10,850	54.9	4.44	
		8:00 pm (2)				from PST stations 8/					
Durant	KSEO (250 D 750 kc (clear 1-A)										CST
Jan.-Dec.		day	399,843	18,713	0.5						
Dec.	7:30 - 5:15	pm (1)				15,157	3.79	266	1.42	8.64	
		6:00 pm (1)				11,651	2.91	45	0.24	17.8	

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indiates Loss): Population	% 6/	Area (Miles²)	mv/m 5/		Coverage of Urban Community. 7/ Notes
OKLAHOMA (cont'd)											
Tulsa	KVCO (50 kw U DA-N	1170 kc (clear 1-B)									CST
Dec.	7:30 - 5:15	6:00 pm (1) (2)	1,144,259	51,792	0.40	*544,244		*33,028	64	1.58 16.	
		7:00 pm (2)				from MST stations 8/					
		8:00 pm (2)				from PST stations 8/					
						lose of all skywave service 8/					
Nearby counties affected by loss of WKY service. More distant counties are not listed. Oklahoma:											
Canadian	Grady	Lincoln	Payne								
Garfield	Kingsfisher	McClain	Pottawatomie								
OREGON											
Portland	KPOJ (5 kw U DA-1	1330 kc (regional)									PST
Jan.-Dec.	day		744,559	4,448	0.5						
Dec.	7:45 - 4:30	4:31 pm (2)				*58,047	9.0	*1,827	74	3.6	
		6:00 pm (?)				*213,048	33	*656	75	11.6	approximate /no
Nearby counties affected by loss of KPOJ service. Others more distant not listed. Oregon:											
Clackamas	Washington	Washington :									
Multnomal	Yamhill	Clark									

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location; and Month 1/	Station; sunrise-sunset time 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (*Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage - Urban Community 7/ Notes
PENNSYLVANIA											
Philadelphia	WCAU (50kw U 1210 kc (clear 1-A))										EST
Dec.	7:15-4:30	5:00 pm(1)	4,976,314	11,380		*1,291,139	26	*8,370	74	3.03	0.5 gw
		6:00 pm(1)				*1,426,277		9,775		6.30	0.5 gw
		7:00 pm(1)				from CST stations 8/					
		8:00 pm(1)				from MST stations 8/					
		9:00 pm(1)				from PST stations 8/					
						Loss of all skywave service 8/					
Philadelphia	WFIL (5 kw U DA-2 560 kc (regional))										EST
Jan-Dec.		day			0.5						
Dec.	7:15-4:30	5:30 pm(1)	3,913,750	4,083	2.42	*131,374	3.0	*653	16	3.16	
		(2)				*683,924	18	*2,720	67	8.77	
		7:00 pm(2)				from CST stations 8/					
		8:00 pm(2)				from MST stations 8/					
		9:00 pm(2)				from PST stations 8/					
Pittsburgh	KDKA (50 kw U 1020 kc (clear 1-A))										EST
Jan-Dec.		day	6,604,000		0.1						
Mar.	6:30-6:30	7:00 pm(1)				*3,242,000				2.17	from CST stations
Dec.	7:30-5:00	6:00 pm(1)				*3,957,000				3.75	
		7:00 pm(1)				*4,362,000				5.85	from CST stations
		8:00 pm(1)				from MST stations 8/					
		9:00 pm(1)				from PST stations 8/					
						Loss of all skywave service 8/					

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location; and Month 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage - Urban Community. 7/ Notes
PENNA (cont'd)											
Pittsburgh	WAMP (5 kw U DA-N 1320 kc (regional))										EST
Dec.	7:30-5:00	5:00 pm(1)				*698,900		*710			no
		6:00 pm(1)				*886,000		*810			
		7:00 pm(1)				from CST stations 8/					
		8:00 pm(1)				from MST stations 8/					
		9:00 pm(1)				from PST stations 8/					
Stroudsburg	WVPO (250w D 840 kc (clear 1-A))										EST
Jan-Dec.		day	92,662	1,134	0.5						
Dec.	7:15-4:30	4:30 pm(1)				20,335	21.9	104	9.1	5.5	
		5:00 pm(1)				16,885	18.2	38	3.45	11.2	
		6:00 pm(1)				10,411	11.2	10	0.88	27.5	
York	WORK (1 kw 5 kw-D U DA-N 1350 kc (regional))										EST
Dec.	7:15-4:45	6:00 pm(1)	131,523	307	3.62	*42,065	32	*241	78.5	16.46	no

Nearby counties affected by loss of WORK service. Others more distant not listed: Pennsylvania: York.

Nearby counties affected by loss of WCAU service. Other more distant counties not listed:

Pennsylvania:	New Jersey:
Burks	Burlington
Chester	Camden
Delaware	Gloucester
Montgomery	Mercer
	Ocean

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location and Mor.[1]	Station; sunrise-sunset time.[2]	Time; and mode of change.[3] [4]	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m [5]	Resulting Gain or Loss of Services (* Indicates Loss): Population	% [6]	Area (Miles²)	% [6]	mv/m [5]	Coverage-Urban Community.[7] Notes
RHODE ISLAND											
Providence	WPRO (5 kw U DA-N 630 kc (regional))										EST
Mar.	6:00-5:45					Data not filed; see December					
Dec.	7:00-4:15	5:15 pm(2) 7:00 pm(2) 8:00 pm(2) 9:00 pm(2)	1,184,858	1,531	2.03	*171,964 from CST stations[8] from MST stations[8] from PST stations[8]	14.5	*454	29.5	4.42	
SOUTH CAROLINA											
Greenville	WESC (5 kw D 660 kc (clear 1-A))										EST
Jan-Dec.			674,000	10,320	0.5						
Dec.	7:30-5:15	5:16 pm(1) 6:00 pm(1)				134,000 108,000	20 16	450 200	4.4 1.9		
Greenville	WFBC, WQOK, WESC, WMUU, WMRB, and WFIS (composite)										EST
Dec.	7:30-5:15	6:01 pm(1) 7:00 pm(1) 8:00 pm(2) 9:00 pm(2)				*17,680 *24,800 from MST stations[8] from PST stations[8]	13.5 18.3	*153 *219	46.9 64.4		Loss of all radio service - new white area. [8]
Nearby counties to Greenville, South Carolina, affected by loss of all radio service.											
South Carolina: Anderson, Greenville, Pickens											
TENNESSEE											
Nashville	WSM (50 kw U 650 kc (clear 1-A))										CST
Dec.	6:45-4:30	5:30 pm(1) 6:00 pm(1) 7:00 pm(1) 8:00 pm(1)				*187,255 *574,031 from MST stations [8] from PST stations [8] Loss of all skywave service[8]	10.5 32.2	*4,990 *15,998	13.5 43.4	0.6 1.02	0.5 gv 0.5 gv

Note: See last page for footnotes.

TENNSESSEE (continued)

Nearby counties affected by loss of WSM Service. Other more distant counties not listed:

Tennessee:
- Clay
- Franklin
- Grundy
- Houston
- Humphreys
- Lawrence
- Overton
- Perry
- Putnam
- Stewart
- Van Buren
- Wayne
- White

Alabama:
- Jackson
- Lauderdale
- Limestone
- Madison

Kentucky
- Barren
- Christian
- Edmonson
- Grayson
- Hopkins
- Metcalf
- Monroe
- Muhlenberg
- Ohio
- Trigg

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location; and Month[1]	Station; sunrise-sunset time.[2]	Time; and mode of change. [3] [4]	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m [5]	Resulting Gain or Loss of Services (* Indicates Loss): Population	% [6]	Area (Miles²)	% [6]	mv/m [5]	Coverage-Urban Community. [7] Notes
TEXAS											
Cleburn	KCLE (250w D 1120 kc (clear 1-A))										CST
Jan-Dec.		day	186,218	6,741	0.5						
Dec.	7:30-5:30	5:30 pm(1)				15,583	8.4	100	1.5	13.8	
		6:00 pm(1)				12,901	6.9	45	0.67		no
Dallas	KIXL (1 kw D 1040 kc clear 1-A))										CST
Jan-Dec.		day	1,441,149	21,352	0.5						
Dec.	7:30 -5:15	5:15 pm(1)				583,013	40.4	747	3.49	12.3	
		6:00 pm(1)				400,818	27.8	243	1.14	24.3	
Dallas	KSKY (1kw D 660 kc (clear 1-A))										CST
Jan-Dec.		day	1,753,000	36,050	0.5						
Dec.	7:30-5:15	5:15 pm(1)				1,110,000	63	6,110	17		
						762,000	43	3,525	10		
Dallas	WFAA (50 kw share WBAP 820 kc (clear 1-A))										CST
Fort Worth	WBAP (50 kw share WFAA 820 kc (clear 1-A))										
Jan-Dec.		day	5,923,673	284,260	0.1						
Dec.	7:30-5:15	4:30 pm(1)				*2,685,739	45.3	*192,656	67.7	0.9	0.1 gw
		5:00 pm(1)				*3,320,096	56.0	*231,047	81.2	1.90	0.1 gw
		6:00 pm(1)				*1,970,308	52.8	* 97,750	78.6	4.81	0.5 gw
		7:00 pm(1)				from MST stations[8]					
		8:00 pm(1)				from PST stations[8]					
						Loss of all skywave service[8]					

Note: See last page for footnotes

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES

Location; and Month 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	% 6/	mv/m 5/	Coverage-Urban Community. 7/ Notes
TEXAS (cont'd)											
Houston	KPRC (5 kw U DA-N 950 kc (regional))										CST
Jan-Dec.		day	1,434,208	25,100	0.5						
		ss+1 min									
Dec.	7:15-5:30		1,629,672	38,760	0.31	*692,467	43	*31,360	81	3.52	
		6:00 pm(1)	1,197,202	14,225	1.6	*417,704	35	*12,425	87	12.8	
Pasadena	KRCT (250w D 650 kc (clear 1-A))										Near Houston
Jan-Dec.		day	1,012,178	13,054	0.5						CST
Dec.	7:15-5:30	5:30 pm(1)				157,864	15.6	191	1.46	11.2	no
		6:00 pm(1)				56,210	5.55	72	0.55	19.3	
Port Neches	KPNG (500 w D DA 1150 kc (regional))										CST
Jan-Dec.		day	231,509	2,603	0.5						Near Beaumont
Dec.	7:00-5:15	6:00 pm(1)				10,582	4.4	57	1.5	25.5	no

Nearby counties affected by loss of WBAP/WFAA service. Other more distant counties are not listed.

Texas:

Anderson	Eastland	McLennan	Titus
Archer	Freestone	Red River	Wichita Falls
Comanche	Hamilton	Smith	Wood
Coryell	Limestone	Stephens	Young

Oklahoma:

Atoka	Garvin
Choctaw	Pontotoc
Coal	Pushmataha
Cotton	Stephens

Nearby counties affected by loss of KPRC service. Others more distant not listed.

Texas:

Brazoria	Fort Bend	Harris	Waller
Chambers	Galveston	Liberty	

Note: See last page for footnotes.

EXTENT OF PRESENT GROUNDWAVE SERVICE COMPARED TO POTENTIAL GAINS AND LOSSES.

EXTENT OF PRESENT GROUNDWAVE SERVICE CONTRASTED TO POTENTIAL GAINS AND LOSSES.

Location; and month. 1/	Station; sunrise-sunset time. 2/	Time; and mode of change. 3/ 4/	Present Service: Population	Present Service: Area (Miles²)	Present Service: mv/m 5/	Resulting Gain or Loss of Services (* Indicates Loss): Population	% 6/	Area (Miles²)	mv/m 5/	Coverage of Urban Community. 7/ Notes
VIRGINIA										
Richmond	WRVA (50 kw U DA-1 1110 kc (clear 1-B))									EST
Jan.-Dec.		day			0.1					
Dec.	7:15 - 5:00	6:00 pm (1)	1,087,379	9,610		*743,010	68.3	*8,716	90.6	
		7:00 pm (1)	skywave			*16,653,753	100	*383,000	100	from CST static 8/
		8:00 pm (?)				from MST stations 8/				
		9:00 pm (2)				from PST stations 8/				
						loss of all skywave service 8/				
Bedford	WBLT (1kw D 1350 kc (regional))									
Jan.-Dec.		day	36,182	887	0.5					
Dec.	7:30 - 5:00	6:00 pm (1)				4,657	12.9	19	2.1	24.8

Nearby counties affected by loss of WRVA service. Others more distant not listed. Virginia: Gloucester, Isle of Wight, James City, Mathews, Nansemond, Norfolk, Northampton, Princess Anne, Surry, Warwick, York

WASHINGTON										
Omak	KOMW (1 kw D 680 kc (clean 1-B))									PST
Jan.-Dec.		day	43,700	8,660	0.5					
Dec.	7:45 - 4:00	4:00 pm (1)				19,600	45	2,870	33	
		5:00 pm (1)				8,900	20	430	5.0	
		6:00 pm (1)				5,500	12.6	150	1.7	
WEST VIRGINIA										
Clarksburg	WHDX (1kw D 750 kc (clear 1-A))									EST
Jan.-Dec.		day	336,309	3,425	0.5					
Dec.	7:30 - 5:00	5:00 pm (1)				117,645	34.9	810	23.6	5.7
		6:00 pm (1)				41,596	12.3	85	2.48	23.8
Wheeling	WWVA (50 kw U DA-N 1170 kc (clear 1-B))									EST
Jan.-Dec.					0.1					
Dec.	7:45 - 5:00	6:00 pm (1) (2)	3,150,048	19,429	0.38	*2,665,639	85	*16,000	82.3	2.68 16
		7:00 pm (1) (2)	2,933,953	16,222	0.51	*2,523,042	86	*13,454	82.9	3.35 16
		8:00 pm (2)				from MST stations 8/				
		9:00 pm (2)				from PST stations 8/				

Notes. [illegible]

no

Footnotes

1/ December, the month in which the winter solstice occurs, is representative of conditions during the winter season. March, in which the vernal equinox occurs, is representative of the spring and fall seasons.

2/ U (unlimited time); D (daytime); SH (specified hours); DA-N (directional antenna - night); DA-1 (directional antenna - same day and night); DA-2 (directional antenna - different day and night); S (shares time with); L (limited time).

3/ Each entry shows conditions existing to the hour shown. Pre-sunrise data is not included in the tabulation except where noted. Such may be considered the conjugate of post sunset operation.

4/ Modes of change in station operation:

(1) If stations licensed under the rules to broadcast during daytime hours, i.e., between local sunrise and sunset, were licensed under amended rules to extend broadcasting during such nighttime hours as may occur between 6:00 a.m. and 6:00 p.m. local standard time.

(2) If, in addition to (1) above, stations licensed under the rules to broadcast, with no maximum limit as to time, in accordance with nighttime reductions in power or change to prescribed nighttime directional antennas, were licensed under the amended rules to extend broadcasting with no power reduction or antenna change during such nighttime hours as may occur between 6:00 a.m. and 6:00 p.m. local standard time.

5/ Indicates the normally protected service contour or the interference limitation, whichever has the greater signal intensity, in millivolts per meter. An interference limitation, which results from two or more stations operating on the same channel at the same time, delimits the range of each station to the nearby areas which receive a signal strong enough to buffet out the resulting ambient interference.

6/ The percent of service gain or loss is compared to the service now afforded by the operation of the station at the time shown or, where such operation is not licensed, as compared to the service afforded during the daytime licensed hours.

7/ The extent of rural coverage is not included in the tabulation except where noted. The loss of skywave coverage, the only service available under nighttime radio propagation conditions in the standard broadcast band to more than fifty percent of the United States land area, is shown by notation for stations now affording such service.

8/ This tabulation is based upon the operation of postulated new stations, initially licensed under the amended rules, and in accordance with the indicated modes of change in station operation as described abov

Appendix II

NUMBER OF STANDARD BROADCAST STATIONS AUTHORIZED

AS OF MARCH 1, 1959

Class of Channel	No. of Channels	No. Ltd. Time	No. Daytime	No. Fulltime	Total
1. U.S. I-A	25	14	45	26	85
2. Canadian I-A	7	0	180	33	213
3. Mexican I-A	6	0	255	2	257
4. Bahamas I-A	1	0	13	6	19
5. U.S. I-B	19	3	51	107	161
6. Foreign I-B	2	0	7	11	18
7. Class III	41	0	975	748	1723
8. Class IV	6	0	2	933	935
Totals	107	17	1528	1866	3411

Appendix III

ISSUES SET FORTH IN THE NOTICE OF INQUIRY

1. The times during which, the areas in which, and the populations for whom the "6 to 6" operation would result in a new primary service.

2. The extent to which such new primary service would occur where no other primary service is available:

   (a) From any other station.

   (b) From any other station located in the same community.

3. The periods during which, the areas in which, and the populations for whom primary service now available would be subjected to objectionable interference.

   (Note: The losses in areas and population during all hours affected by the proposal, both before and after local sunset and after and before local sunrise, bearing in mind time differences throughout the country, are requested in response to this issue.)

4. The extent to which the foregoing losses of service would be sustained in areas which receive no other primary service.

5. Data similar to "3" and "4" above, with respect to losses of skywave service of Class I stations during evening listening hours before 9:00 PM, Eastern Standard Time; and morning listening hours after 3:00 AM, Pacific Standard Time.

6. The degree of interference which would result from authorization of "6 to 6" operation to stations in other North American countries with which the United States has broadcasting agreements, determined in accordance with the nighttime standards of these agreements. (In instances of interference to Class I stations, areas affected should be shown.)

7. Whether it would be equitable, reasonable and appropriate allocation practice to authorize daytime stations to operate from "6 to 6" and preclude unlimited time stations with different daytime and nighttime facilities from using their daytime facilities during the same non-daytime hours.

8. If it should be concluded that daytime stations should be permitted to operate from "6 to 6", and if, in answer to "7" above, it is also concluded that fulltime stations should be permitted to operate with their daytime facilities from "6 to 6," how much additional interference (in areas and populations) would be caused and how much service would be gained or lost by fulltime stations so operating?

9. Should "6 to 6" licensing be considered in only those communities with no local fulltime standard broadcast station?

10. Should "6 to 6" licensing be considered in terms of such licensing limited to only one station in a community?

11. If "6 to 6" licensing is to be permitted only for stations in communities with no local fulltime stations, should such "6 to 6" authorizations be terminated when fulltime stations are licensed in the same communities?

12. Of the 913 communities having one or more daytime stations but no fulltime stations, listed by Daytime Broadcasters Association, Inc. (in its Engineering Statement appended to its comments in Docket No. 12274), which communities receive primary service from fulltime stations located in the same urbanized or standard metropolitan areas (as defined by the 1950 U.S.Census) or in the same counties?

13. Would it be feasible for daytime stations, if operating after sunset, to reduce power sufficiently at sunset and before sunrise to limit interference to other stations to the daytime level? If so, how much service would be provided with such reduced radiation?

14. Specifically, what changes in Commission Rules would be necessary in order to authorize the "6 to 6" operation upon which inquiry is made herein?

15. What changes, if any, would be necessary or desirable in the text of and in the Commission's procedure pursuant to Section 3.87 of the Commission's Rules if the "6 to 6" operation were adopted?

16. Considerations other than those arising from the physical facts of radio propagation, including:

(a) What effect would the new services gained have on reception of needed and valuable programs by persons who are advantaged by such reception, including emergency and weather information, farm information, national and local news, programs and announcements concerning local affairs and local organizations? *

(b) What effect would the limitation of service through destructive interference have upon access to events of national and regional interest and to programs of a type which cannot be originated by local communities, and other needed and valuable transmissions now available under the existing allocation rules?

(c) With respect to those of the 913 communities mentioned above which are located in the same standard metropolitan or urbanized area as, or the same county with, a fulltime station, to what extent do the fulltime stations serve the particular local needs of such communities?

(d) The effect of the proposal on the CONELRAD operation, considering the need for alerting broadcast stations, other radio stations and the general public by means of skywave and groundwave radio signals.

(e) What would be the effect of grant of the "6 to 6" operation on the development of FM broadcasting?

---

* We expressed the view in the Report and Order in Docket No. 12274 (par. 49) that the needs and advantages relating to programming were common to all radio service, and that "any change in allocation rules which results in degradation of overall radio service results in less meeting of the various needs and provides for less of the advantages than at present." We adhere to that view on the basis of the record made in that proceeding. But we wish to permit the presentation of any special facts as to the value of the programming of certain stations or kinds of stations which may be available; and accordingly we are including this among the issues herein. Data supplied along this line, as in other connections, should be specific and factual, rather than general and conclusionary.

Mr. FORD. Mr. Chairman, Mr. BARR, who is one of our engineers of long service in the Commission has here with him some charts which the committee might find profitable for a background into the physical reasons for the rules that the Commission has and if the committee would like to hear that, I would ask him to show you those charts, with a little explanatory statement of them.

The CHAIRMAN. Can these charts be reproduced?

Mr. BARR. They can be.

The CHAIRMAN. Very well. I think it might be appropriate to present this information at this point.

Mr. BARR. The point, Mr. Chairman, is to give you, one, some of the basic reasons why we have the allocation structure that we have, why we have daytime stations and some of the little simple physics behind it.

In the first place, I think we mentioned before there are 107 standard broadcast channels; that the objective to be served with the broadcast service, we have enumerated specifically three, I believe. The first one is to get some service to all the areas of the United States, a minimum at least of one service to everybody in the United States. That, of course, means to all areas. A second objective is to provide as many local community outlets as possible for cities and towns and the communities that want radio stations; and thirdly, to provide as many services as possible to everyone.

I think this point is not ordinarily recognized. Those objectives, particularly the first and second two are almost in direct conflict. In order to get a service to every area in the United States, and this includes the sparsely populated rural areas where there will not be stations established, you do that by a fewer number of stations rather than by a large number; particularly at night, you cannot cover on a given channel the entire United States by a multiplicity of stations. This is by reason of the interference that occurs between them, particularly at night.

The first thing to understand about the interference is the fact that an interfering signal, much, much smaller in magnitude than the signal you are trying to listen to, can cause ruinous interference. We can consider that a signal, one-twentieth of the signal you are trying to listen to, will create objectionable or ruinous interference. When you couple that fact with the fact that at nighttime the signals from a radio station on the standard broadcast band, even a 250-watt station, the smallest ones we have, will go as far as 2,000 miles, whereas the area in which it will render a service, decent and reliable service, is restricted to a matter of 25 or 30 miles at the most, and you can understand why this multiplicity of stations on any given channel will not result in a large area served.

The CHAIRMAN. Why don't you explain what is a clear channel and what is a regional channel?

Mr. BARR. I mentioned the fact that there are these conflicting objectives and in allocating or making use of the 107 channels, the Commission considers that about half of them should be devoted to this first objective of getting some service to every area within the United States so the provision is made for the so-called clear-channel stations. That is a misnomer in that none of the channels are absolutely clear. They do get provision for extensive protection from

interference and, for instance, on what we call the class 1–A clear channels, of which there are 25 assigned to the United States, there is only one station within the United States permitted to operate at night on one of these 25 clear channels.

The CHAIRMAN. Where are these stations located?

Mr. BARR. On 640, I think that is the first 1–A station, KFI, Los Angeles, operating on 50 kilowatts and they only operate at night. On the next channel, 650, WSM, at Nashville, Tenn.; 660, WNBC, in New York, and so on. There are 25 of them.

The CHAIRMAN. They are designated clear channels because they are given clearance over everything else?

Mr. BARR. The idea is to let them serve as extensive an area as possible and they can do that only in the complete absence of interference. The result is that the primary service area of one of those stations extends out in the order of 200 miles at night and their secondary service generally extends over half the United States in most cases.

Mr. AVERY. Mr. Chairman.

The CHAIRMAN. Mr. Avery.

Mr. AVERY. Could I intercede for just a moment? In theory a clear channel defined would be an assignment of a broadcast frequency that would not be interfered with nor trespassed upon by any station within the reach of its signal?

Mr. BARR. Yes, sir.

Mr. AVERY. That is the theory of it. Of course, it does not always perfectly work out, is that right?

Mr. BARR. We can say that on these 25 channels that any one of them, on the majority of the nights of the year, you can hear to some degree of satisfaction in all parts of the United States and within a radius of approximately 1,000 miles around each one of them; particularly in the wintertime they render a very satisfactory service.

Mr. AVERY. I believe you just said, which would of course substantiate what you more recently said, that it is normally estimated that their signal would reach about half of the United States.

Mr. BARR. Yes, sir. That is very rough.

Mr. AVERY. You mentioned a clear-channel assignment in New York. Would you assign under your clear-channel practice another station on that same wavelength say on the west coast or does clear channel mean clear and it is absolutely clear and not trespassed on?

Mr. BARR. We have neighboring countries and we have stations that operate during the daytime. That is the reason I say it is not entirely a clear station. The provisions of the rule at the moment are we would not assign that secondary station in the West but as you are aware, I think, we have this clear-channel proceeding, which for the first time in a number of years we are getting close to a solution or like to think we are and we have an outstanding proposal looking toward duplication, to a limited extent, of those particular 25 channels.

I do not know what will come of that. That is a proposal we have made, to do what you suggested as a possibility.

The CHAIRMAN. In order to have it perfectly clear, I understood you to say a little while ago that there are 25 clear-channel stations

in the United States. Will you have someone prepare a list of the 25 clear-channel stations and their call numbers and insert it in the record where you started out a moment ago? You do not have to take the time to give it now. Just include it in the record.

Mr. BARR. Yes, sir.

(The information requested was later submitted and appears at the end of the testimony of FCC witnesses.)

Mr. SPRINGER. May I ask a question?

The CHAIRMAN. Mr. Springer.

Mr. SPRINGER. For instance, I am driving along. I may get an announcement on the radio that this is a New York station or a Houston station or Los Angeles station at night. Would that be any other than those?

Mr. BARR. If you are driving at night——

Mr. SPRINGER. I am driving in Illinois.

Mr. BARR. Chances are you are listening to a clear-channel station from some part of the United States. It is the only satisfactory service you can get in an automobile at night. You can tune in a station and listen to it for hours; otherwise, you are constantly jumping from one station to another every 5 minutes.

The CHAIRMAN. You can take it from me on the basis of my own experience in traveling on the road a little while before sundown and a short time after sundown you cannot get anything.

Mr. BARR. You certainly cannot get anything except the clear-channel stations.

The CHAIRMAN. Even those are interfered with.

Mr. BARR. I said a while ago they are not as clear as they should be.

The CHAIRMAN. It may be my radio.

Mr. BARR. I think my point was we devoted only half of these 107 channels to this particular purpose and that even there, of that approximately 50, they are shared on the same basis with the other countries of the North American region. We have the lion's share of them, but there are 25 of them of this specific high clear-channel status, 1–A. Canada has seven of them, Mexico has seven of them, and the Bahamas have one. Mexico has six; I beg your pardon.

The other half of the channels are divided into, I think, primarily 40 regional and 6 so-called local channels.

This chart was designed to give you an idea of the arrangement of interference referred to a while ago in comparison to the service area.

On a clear channel, for instance, a 1-kilowatt station, if its service area is represented by this bar, its interference potential is represented by this; the same for a 5-kilowatt station operating on a clear channel. Their service ratings are something of this order, interference is something of this order; the same thing for 10 kilowatts.

The CHAIRMAN. How many do you say you have allocated for regional channels?

Mr. BARR. Thirty-nine, I believe.

The CHAIRMAN. Thirty-nine?

Mr. BARR. Thirty-nine regional channels.

The CHAIRMAN. You have six local?

Mr. BARR. Yes.

The CHAIRMAN. What do you mean by "local"?

Mr. BARR. These are rather technical designations. I could define each one of these classes of stations and classes of channels if you would like. On a local channel the primary purpose to be served by that is a station of some sort for the smaller communities, a station that could operate unlimited time. There are six of those channels and on each of those there are somewhere in the neighborhood of 200 stations operating. That is the average figure.

The CHAIRMAN. On each of them?

Mr. BARR. Each of those local channels; yes, sir. This is the point right here that maybe will help us get over the fact that you do not serve a large area by a multiplicity of stations. Take any one of those local channels with from 150 to 200 stations operating on them at night. They only operate with 250 watts, which is pretty small power. They serve out to an average radius of 5 or 10 miles. Five miles, I would say, would be closer to the average. It has never gotten in excess of 10 miles.

The CHAIRMAN. You are talking about nighttime now?

Mr. BARR. Yes, sir; at night. The point I will get at is if you increased that 250-watt operation to 5 kilowatts or 50 kilowatts for each one of those individual stations, the total service they covered, their service areas would not change one whit. That is by reason of the fact their service is limited by the interference each from the other, rather than by the distance that the signal will travel.

Do you get this point?

The CHAIRMAN. Yes.

Mr. BARR. You could go up in power with those stations. If they all went up at the same time, their service area which is out to an average of 5 miles would not change one bit. The other important part about that, with these 150 to 200 stations, that total service area you can see is still quite small. With a 5-mile radius average it comes out to be less than one-tenth of 1 percent of the land area of the United States.

The CHAIRMAN. While we are on that, I had another idea. There has been a great demand among that class station to give them an automatic increase of operation from 250 watts to 1,000 watts.

Mr. BARR. Yes, sir.

The CHAIRMAN. Do I understand from you, if you were to give them an automatic increase from 250 watts to 1 kilowatt, that it would not increase the coverage of their service at all?

Mr. BARR. At night; it would not increase it at night. As a matter of fact, we have permitted the increase in the daytime. That was a request that we received some time back, a petition to increase the maximum power permitted on these local channels from 250 watts to 1,000 watts, and the Commission, after due consideration, made it possible for them on a case-to-case basis to increase their power daytime from 250 watts to a kilowatt. We did not authorize or permit them to go up in power at night, not because there would have been any particular objections to that if it were the United States only involved, but primarily because of the fact we have the adjoining countries and they are operating their stations under the same sort of provisions, limiting to 250 watts at night and that would have created a problem there. There are one or two other minor problems about permitting the nighttime increase on a blanket basis.

We have permitted them to increase daytime on a case-to-case basis.

The CHAIRMAN. Many of them you have increased. You could not do that generally because of interference.

Mr. BARR. The interference potential on a regional channel for instance, at night, and these all have reference to nighttime conditions, their service contour is, of a half kilowatt station, 22 miles as compared with 559 miles for an interference potential and likewise the same disparity between service and interference potential on these two bars.

Mr. AVERY. Mr. Barr, before you go on, so we keep the record pretty clear, and I think we are following you up to now, a regional channel assignment is one that carries 24-hour service privilege?

Mr. BARR. There are——

Mr. AVERY. For more than daytime.

Mr. BARR. Yes, sir. Regional stations are permitted to operate both day and night. There are provisions for a daytime station to operate on regional channels and we have about a thousand of them on regional channels.

Mr. AVERY. Does the power limitation vary from daytime to nighttime with the regional station as it did with your local station?

Mr. BARR. Yes, sir.

The CHAIRMAN. How many of these regional stations do you have on each channel? I suppose you do not have the same number on each channel as you have in the case of local stations.

Mr. BARR. Yes, sir.

I will make a quick guess on the average number of stations on a regional channel. We have statistics here. First off, there are about 1,000 daytime stations operating on these 39 regional channels. There are 790 unlimited time stations. The total stations on the regional channels is in the order of 1,800, of which about 1,000 are daytime only.

The CHAIRMAN. In other words, in an unlimited operation, there are 790, on 39 channels?

Mr. BARR. Yes, sir.

This next chart gets into a little bit of physics of radio signals and how they behave.

I think you have all heard before a number of times, and I mentioned a while ago, a radio signal will go much farther at nighttime than it will during the daytime.

The CHAIRMAN. That is what confused me about your 250-watt stations a while ago. You said at nighttime they only get out 5 miles, but in daytime they get out 25 miles.

Mr. BARR. Their service area, Mr. Chairman, at night will extend only a matter of 5 miles and the reason, if you take an individual local channel station and remember that there are somewhere in the neighborhood of 150 other stations over the whole United States surrounding it, the service area extends a service of 5 miles around that one station by reason of the fact that there are skywave signals from all these other 150 stations coming into that area and the total combination of these other signals coming in from the other stations are such as to make this signal from the station we are trying to listen to, the one we are talking about, unintelligible beyond the 5-mile range.

61308 O—60——10

It isn't the signals do not go 5 miles; they go thousands of miles.

The CHAIRMAN. Does he cut his power down to keep it within the 5-mile area himself?

Mr. BARR. No. This is the point I tried to make a while ago, that that service area is independent of the power, so long as he overrides the static and noise, on a local basis.

The CHAIRMAN. In other words, if you let him go beyond that, you get into all kinds of interference from some other place?

Mr. BARR. Yes. The only way you can practically extend his service area is to start taking stations off of the channel. If you cut it down to where you only have the one station operating on the channel at night, instead of 5 miles—Mr. Chairman, this is kind of a complicated chart. I will just touch on it.

It is proposed to indicate the relative magnitude of a signal in the daytime and a signal at nighttime.

Starting in the morning, prior to sunrise, the signal at any given station, say, a minimum of 500 miles away from it may have a magnitude of 4,000.

The CHAIRMAN. 4,000 what?

Mr. BARR. We will call that an arbitrary unit. It is relative to what it will have at 9 o'clock in the morning 2 hours after sunrise. That simply means this 10 compares with 4,000, it is 400 times stronger 2 hours before sunrise than it is 2 hours after sunrise.

The CHAIRMAN. In other words, where your pencil is on the lower sheet, that is where you start at sunrise?

Mr. BARR. This period here represents midnight. You cannot see the figures along here. At midnight if we tuned in a signal from a distant station and assigned the value of signal it had at that time, assigned a value of 4,000 units, then from midnight, on up until the sun comes up to this point, that signal gradually decreases in value and at sunrise it is down to a value of 500. Then it really takes a nosedive and for 2 hours after sunrise it has gone down to this low value of the order of 10, which relative to 4,000 is practically negligible.

During the daytime and through the noon period, on up until the afternoon period, there isn't any signal you can discern from that distant station. It has gone. Starting in the middle of the afternoon it begins to build up, again very rapidly, up until the sunset period itself, at which time it is near back up to the 500 value that it had at sunrise. It continues to increase during the next 2-hour period until it levels off somewhere in this area here. It begins to level off about 2 or 3 hours after the sun has set. As I said, that is a rather complicated chart. I think it gets over the point that there is a 400-unit difference between a skywave signal at night and the value as of the middle of the day.

The CHAIRMAN. What kind of signal is it during the daytime? You call it the skywave signal at night.

Mr. BARR. It will be the same signal. The point of the chart was to show the skywave intensity at daytime is practically nonexistent.

The groundwave, the wave we ordinarily use for service is called a groundwave, and that exists both day and night and with the same value.

May we go on to this regional channel? We have chosen a typical regional channel, 950 k.c., to sort of demonstrate how the allocation

of stations is carried out on that channel. This is typical. I think you asked a while ago what the average number of stations are on a regional channel and there are about 22 or 25. I think it is in the order of 25, on this particular channel. Some of them are in black, some of them are in red.

The ones in black are the stations that operate day and night, the unlimited time stations. The stations in red are those that have been sort of shoehorned in on the basis of daytime conditions.

The CHAIRMAN. Is there any other way in which you can show that? Our printed hearings cannot distinguish between red and black. As you give it to us, could you put an X by one?

Mr. BARR. This chart was used once before. They are underlined. Underlining indicates the daytime station. They are differentiated. This is to give you a picture of the dispersion of stations on the regional channels.

The CHAIRMAN. How many stations do you have on that channel?

Mr. BARR. My guess is there are 25; between 20 and 25. That is the average figure for a regional channel.

This is a chart that directly relates to one of these unlimited time stations; WSPA, Spartanburg, S.C.—he was not chosen for any particular reason. I think he is the worst affected if the daytime were permitted to operate at night and there might be other cases where they would not be quite as bad as this. This is supposed to be somewhere in the neighborhood of an average station.

Now, even forgetting the daytime for a moment, I will explain that the stations that are operating on limited time have a much greater potential for interference among them operating after sunset and accordingly they always serve much less area at night than they do in the daytime, with the exception of the clear channel stations, but as far as the regional channels are concerned, when we start putting as much as a half dozen stations on the same channel, they always will serve less at night than they do during the daytime.

The normal service area of WSPA, they have a directional antenna, and that is the reason for this shape——

Mr. AVERY. Do all of them have a directional antenna?

Mr. BARR. By far the great majority of them.

I would say 90 percent of them do.

Mr. AVERY. That is on the regional channels?

Mr. BARR. Yes, sir. His service area at night looks something like this. This is Spartanburg itself here in the center and the other very close communities around it. The scale of miles would indicate his maximum service area is in the order of 20 miles this way and about the same back off from the side. This indicates that these are the conditions obtaining right after the sunset hour when the daytime stations have gone off the air. His service during the next hour after sunset decreases to this extent and finally establishes itself 2 hours after sunset at about this value, so his normal night service area extends out in that direction something in the order of 12 miles, about the same in the other direction from Spartanburg. He still adequately serves the city and a number of surrounding communities.

The CHAIRMAN. In the daytime, how far out does he go?

Mr. BARR. The daytime picture I think he operates without a directional antenna. Actually, it is a circle something in that order, but

he has already made a concession to this nighttime situation by changing to this directional antenna pattern at night. He does that to protect the other stations on the channel.

Mr. AVERY. Are those charts based upon the presumption that his power will not change?

Mr. BARR. This particular station is permitted to use the same power at night that he has in the daytime, 5 kilowatts. There are a number of them that have different powers at night. They have less power at night. Nearly all of them will have these restricted directional antennas. These antennas are not very desirable for service considerations.

Mr. AVERY. From what you said a while ago in respect to the local situations, it probably applies here even though his requirements did fluctuate from day to night, his service area would not materially change?

Mr. BARR. Yes. It is generally less at night. Oftimes when they employ directional antennas it is severely curtailed over part of it.

Mr. AVERY. It would be curtailed anyhow, would it not?

Mr. BARR. This is without reference to the daytime operation at all. It is curtailed to start with; yes, sir. This has reference to the conditions that obtain without any reference to the daytime stations.

The CHAIRMAN. In other words, that is what happened to the normal operation of this particular regional station?

Mr. BARR. Yes, sir.

Now, if we consider to permit all the daytime stations, these red stations that we mentioned as shown here, to continue operation past their sunset period, plus, and this is something that the bill does not encompass, and we have a hard time seeing how you could permit WXLW, who operates at 5 kilowatts in the middle of Indiana to continue his operation after sunset, when WWJ, Detroit, has a directional antenna which he has to put into effect at the sunset period, WKAZ, this particular station is one that has 5 kilowatts day and 1 kilowatt night, he would have to cut back to a kilowatt at night, and here is one with 1 kilowatt at day and 500 kilowatts at night; everyone of these black stations has a less desirable operating condition either by reason of reduced power or by reason of these directional antennas that they have to employ that goes into effect after nightime conditions so as I said, we have a hard time justifying the daytimers to continue their operation after sunset without permitting these stations to similarly use their daytime facilities for that extended 2-hour period so these interference considerations that we show here are based on all of the stations continuing operation after sunset with their daytime facilities.

That means daytime stations would continue with whatever they had for daytime and that the unlimited time station would continue to operate with him 5 kilowatts nondirectional. After sunset, instead of this service area, he has this service area which is reduced to the order of less than 10 miles here; an hour later he has this service area as compared with this one, and I believe he never quite gets to the 2 hours after sunset in this particular period. The 6-to-6 operation would take the daytimers off. This is not pertinent over here. His service would be reduced during the first hour to this figure and that happens to be the figure that we made reference to in the chairman's statement, the square miles.

Mr. YOUNGER. Just one question, Mr. Barr.

How can the directional antenna give you a pattern like a snowman?

Mr. BARR. If you envisage a radio broadcasting tower—they usually stand up something in that order, and that would be a miniature tower, and if there was only one tower the signals emanate from that tower in all directions equally, so that his service pattern is a circle. Now, if you put two of those towers up and connect them properly, you can change that circle—one of the simplest directional antenna patterns looks like this, where all the radiation in one direction is suppressed and it only radiates over about 180° arch instead of 360°.

Mr. YOUNGER. That is the point. They have a number of towers. The signals do not all come from one tower.

Mr. BARR. That is right. That is the two elements. You can make them as complex as you want to. We have patterns that look like daisies and those nulls are always pointed appropriately toward the other stations on the channel, so the signal can be great where it is used for service and restricted otherwise.

That is supposed to depict a regional channel that would be used for service if we continue the daytime channel after 6 o'clock.

Mr. SPRINGER. There was reference to FM. How would that change the pattern if you had a daytime station on FM? What would be the change in the pattern?

Mr. BARR. First off, this would have no relation to the pattern from the FM station. This is peculiar to the standard broadcast picture.

Mr. SPRINGER. My point is, down below you are showing what the interference is. Say we put a daytime station up there next to WSPA. I want to know what the difference is going to be between the interference by FM and AM.

Mr. BARR. As I said, this whole showing is peculiar to AM. I tried to show you that this interference potential extends much, much farther than the service.

Mr. SPRINGER. Assuming that is true—let's assume everything you say is true. I won't do that, but let's assume it. I want to talk about FM a second. What is the difference in the pattern?

Mr. BARR. I tried to lay the groundwork for that. The FM picture, as contrasted with the standard broadcast picture, the service area, the serviceable signal, and interference potential are nearly equal in FM, so you do not have this extreme reach of interference compared to service. You put a kilowatt FM station here and draw these same charts for them. They would be the same length. The signal goes out, say, a hundred miles and the interfering signal is not much farther than 150 miles. It is a much more ideal situation.

Mr. SPRINGER. There is a difference between 150 miles and 1,330 miles; is that your point?

Mr. BARR. Yes, sir. You can put a large number of FM stations on the same channel without curtailing the night service area the way you do when you try to do it with standard broadcasts.

Mr. BARR. As I said, this depicted a typical regional channel. We picked what we would like to call a typical clear channel, one of these class 1–A channels, in this case occupied by WCAU in Philadelphia.

This chart was used to depict, I understand, over one-half of the United States, but is secondary service area. That is not particularly pertinent to this operation. The main thing is this red service area, and the black line which is part of his primary service area.

Here [indicating] is this new 150-mile radius that I referred to a while ago. He has a primary service area; that is, the ground wave service without regard to this secondary service area, of about 150 miles under normal night conditions for this period of time immediately preceding or succeeding sunset. For instance, if we permitted only one, two, three, or four daytime stations on that channel to operate for the 1½ hours or 2 hours after sunset, the service area of WCAU is cut down to that value [indicating]. You can see a drastic curtailment. This was selected as one of these 25 1–A channels. There is another class of clear channels called 1–B in which there will be two or more dominant stations operating at night. This particular one [indicating], 1,170, we have KVOO at Tulsa and the one at Wheeling, W. Va. Their normal service area primarily is this red area and the secondary service area is the shaded area.

Again, we can insert here with the primary service areas this operation and they would be curtailed by the operations of several daytime stations, plus the fact that they probably would not want to use these directional antennas and their primary service area would shrink to that order [indicating].

Mr. SPRINGER. Since you have mentioned the station at Mattoon, Ill., which is in my district, I am not sure I understand exactly what you are portraying.

Mr. BARR. In this particular one?

Mr. SPRINGER. Yes.

Mr. BARR. Well, I will back up here. This [indicating] is a so-called 1–B channel. It is a clear channel, but instead of being restricted to one station at night, you remember I mentioned there were approximately 50 of these channels, 25 of which are in the United States. We have the 1–A station, and only one station at night, 1210, WCAU, was typical of one of those. There are 22 of these type channels, so-called 1–B, on which there are always two and sometimes three or even four of the so-called dominant stations, all with directional antenna protecting each other, still designed to serve this sparsely populated rural area, the wide area coverage concept. But instead of one station, if we permit two or three and they are shared with other countries—Mexico, Canada, and Cuba—which will use these same type stations and it is all keyed together under our agreement that they get mutual protection—their primary or ground wave service of all KVOO, for instance, is of about this order, which is well over 100 miles in this direction [indicating].

At Wheeling, W. Va., the propagation conditions are a little less favorable and their service area is somewhat less than a 100-mile radius.

Mr. SPRINGER. That is true during daytime or nighttime operations, or both?

Mr. BARR. This is day and night both. They have the same service area day and night.

Mr. SPRINGER. Is that related to the station at Mattoon?

Mr. BARR. Yes, sir. It appears that Mattoon operates on 1,170 kilocycles and it is one of the daytime stations. This is an attempt to show if Mattoon and the other daytime stations, plus the two stations that operate unlimited time and which have directional antennas, to afford these two stations here this operation, and they would

not be required under this provision to permit the daytimers to operate until 6 o'clock. Presumably, we would let all the daytime stations use their facilities—a combined operation of these stations and the operation of WLBH. I guess those are the only daytime stations. Those three stations operating with daytime stations would reduce the service to this order [indicating].

Mr. SPRINGER. You are talking about during what hours?

Mr. BARR. The period between sunset and 6 o'clock when there is only a portion of the year—I think 6 o'clock comes after sunset—and that, of course, is the period we are concerned with, and it is in the wintertime.

Mr. SPRINGER. You are saying they reduce that service and there is interference by WLBH?

Mr. BARR. Mutual interference between the two stations, plus the two unlimited time stations KSTT and WCOO with 10 kilowatts, plus WLBH.

We do not ascribe the major portion of this interference to WLBH, but it is the combined effect of all the stations on this channel operating past the sunset period.

Mr. SPRINGER. What you are saying is that all five stations are reciprocal in that way; is that correct? That is, with reference to interference?

Mr. BARR. Yes, sir.

Mr. SPRINGER. If WLBH is taken out, how much interference do you have then?

Mr. BARR. About the same. We do not ascribe all this reduction from this face value here to the small surface area to WLBH, but it is a combined effect of all the stations operating after 6 o'clock.

Of course, the other thing about these clear channels, and we have on most of them much fewer stations than we would have had if we had not had this clear proceeding and a freeze on daytime operations for a considerable period of time, and so just a small number of stations note this effect.

The CHAIRMAN. What is the station portrayed there?

Mr. BARR. The particular reference we had here was to KVOO in Tulsa, which serves a very extensive area in Oklahoma, and WWVA in West Virginia.

The CHAIRMAN. You are showing what happens to these if the daytime stations were permitted to operate until 6 o'clock.

What would happen to the daytime operations if it went on until 6 o'clock.

Mr. BARR. I am glad you asked that question.

The CHAIRMAN. Perhaps, you are going to show that later and I do not want to take it out of context.

Mr. BARR. That is the next step. The daytimers themselves—and here, again, we have selected WLBH at Mattoon, because it has been the one talked about so much—is a typical example of a daytime station. I think there would be others worse than this and some of them not quite so bad.

First, you have to keep in mind what period of time you are talking about. That period extends beyond sunset in the evening for a part of the year and it encompasses part of the period before sunrise in the morning for part of the year, and it varies from one city to another.

The disparity between day and night operations is much greater in the northern latitudes than it is in the southern latitudes. So, for Mattoon, Ill., this is the particular situation that obtains throughout the year with respect to the relationship between 6 p.m. and sunset and 6 a.m. and sunrise. In June the sunrise occurs about an hour and a half before 6 o'clock, or 6 o'clock comes about an hour and a half after sunrise. Let us start over——

Mr. SPRINGER. You are talking about standard time or daylight saving time?

Mr. BARR. This will be the time for the zone involved, standard time. During January, for instance, in the evening sunset occurs about an hour and a quarter before 6 o'clock.

Mr. SPRINGER. An hour and a half after 6 o'clock.

The CHAIRMAN. If I am not mistaken, you are confused, and if you are, you are confusing us. Let us get straight on the sunset and sunrise.

Mr. BARR. Let us go back to sunset here.

The CHAIRMAN. That is a good idea. Just put it at sunset in June. If it is after 6 o'clock, then it is too much and you are minus 1 hour, are you not?

Mr. BARR. Yes, sir; that is what we are trying to show here.

Starting in October, with the station running until 6 o'clock, it will operate into the nighttime period for about 45 minutes. In other words, 6 o'clock occurs right here [indicating], 45 minutes after the sun has set. In November it is about an hour and 15 minutes after the sun has set, and in December it has gone to an hour and a half, and that is the maximum excursion into the nighttime hours.

The CHAIRMAN. In other words, it would go an hour and a half after sunset?

Mr. BARR. That is right; the 6 o'clock period which is right here is one and a half hours after sunset as seen at Mattoon, Ill., and then it begins to get better in January and it is only an hour and in February it is only a half hour and from March on, 6 o'clock occurs before sunset and we are all clear. The same thing is true in the morning period.

In January if he starts at 6 o'clock in the morning, he will be starting about an hour and 15 minutes before the sun comes up, and in November and February less than an hour and then he is clear. There are 4 months in the year when 6 o'clock occurs in the morning after sunrise and there are 1, 2, 3, 4 or 5 months in the year in which 6 o'clock is after sunset. That is true at Mattoon, Ill., and the maximum period is 1½ hours at night and about an hour and 15 minutes in the morning under which the nighttime conditions obtain.

Mr. SPRINGER. Mr. Barr, assuming everything you have said is true and I do not so assume that at the present time—it means that there are 7 months in which there will be no interference?

Mr. BARR. Yes, sir.

Mr. SPRINGER. And there would be only 5 months according to your chart in which there would be interference?

Mr. BARR. Yes, sir; and of course, the station is operating 7 months already.

Mr. SPRINGER. I understand.

Mr. BARR. So that is unaffected.

The CHAIRMAN. While you are trying to figure that out, I will let your mind roam in another direction which I am sure you are capable of doing.

The CHAIRMAN. You say that these stations now operate about 5 or 6 months in the year from 6 o'clock until 7:30.

Mr. BARR. That is the daytimers.

The CHAIRMAN. The daytime stations?

Mr. BARR. Yes, sir.

The CHAIRMAN. For about 5 or 6 months out of the year they have to cut off at sundown to a range of, say, 15 minutes to 1½ hours after the sun sets?

Mr. BARR. Yes, sir.

The CHAIRMAN. If that operation could be unified or made consistent at 6 o'clock, you would reduce their service during these months from 6 o'clock up until 7:30?

Mr. BARR. The daytime service?

The CHAIRMAN. Yes.

Mr. BARR. Well——

The CHAIRMAN. They are permitted to operate until sunset, are they not?

Mr. BARR. Well, they are permitted to operate until sunset.

The CHAIRMAN. Yes; I know, but if you would have this kind of a situation there are these months in the year from 6 o'clock to sunset during which they would have to cut back?

Mr. BARR. Under this bill you mean?

The CHAIRMAN. Under the 6 o'clock to 6 o'clock proposal.

Mr. BARR. I think it remains in terms of a minimum of——

The CHAIRMAN. They would not be restricted after 6 o'clock at night.

Mr. BARR. It is a minimum of 6 o'clock—at least until 6 o'clock.

The CHAIRMAN. Well, all right. Suppose it were set up so that the time element would be made consistent throughout the year. In other words, for certain parts of the year you would increase the operations of these regional stations and reduce the daytime stations, and then for the other part of the year, you would increase the daytime service and reduce the regional service.

Could that be done without difficulty?

Mr. BARR. I am certain that the unlimited time stations would not object to that. They would get a little bit of the benefits in this period before sunset, but our general opinion would be they could be needlessly curtailing the daytime stations. There is no reason why after 6 o'clock that they should not be permitted to continue after 6.

The CHAIRMAN. In other words, the point is if they continue to operate, say, after sunset and beyond 6 o'clock, their service would be reduced anyway because of interference?

Mr. BARR. Yes, sir.

The CHAIRMAN. If you reduced these other stations who bring about the interference, would not that help? In other words, could not a daytime station operate in the skywave after sunset just as well as any other station for 15 minutes to an hour and a half after sunset?

Mr. BARR. Well, of course, that is what we are talking about here for these 5 or 6 months each year during the wintertime. We are

talking about their operation after sunset for a maximum of about an hour and a half.

The CHAIRMAN. I do not want to divert you from what we were talking about; but suppose this other suggestion would be adopted, what would be the ultimate effect of it?

Mr. BARR. You mean imposing a restriction on 6 o'clock to 6 o'clock to a daytime station the year around?

The CHAIRMAN. Yes, sir.

Mr. BARR. My opinion is that there would be undue interference in the winter months and there would be an undue curtailment on the daytime stations.

The CHAIRMAN. Why would there be undue interference if you applied the same rules to the stations that interfere?

Mr. BARR. The mutual effects of it are such that that is what this chart here was predicated upon—the effect of their operating with their daytime facilities after sunset. The mutual effect is such that all of them suffer a reduction of service very considerably, including the daytime stations too.

The CHAIRMAN. What is the difference between a facility that operates in the daytime and a facility that operates at night?

Mr. BARR. Well, it is the condition.

The CHAIRMAN. Do they have different equipment?

Mr. BARR. In some cases; yes, sir. They have different directional antennas, but that need not be so. However, what is the significant difference is the amount of interference they get.

The CHAIRMAN. You do not mean to say that if you reduce the stations providing the interference at a certain time, you get the same effect?

Mr. BARR. No, sir.

The CHAIRMAN. The stations that come on at sundown, then, are the ones?

Mr. BARR. No, sir; we do not have any stations coming on at sundown. They continue operations.

The CHAIRMAN. I know they continue operations, but with reduced power—5 kilowatts in the daytime and 1 kilowatt at night.

Mr. SPRINGER. The point is this: Why not make 6 o'clock the dividing line between 1 kilowatt and 5 kilowatts? Why not make that the dividing line instead of sunset and sunrise, and then the daytime stations could come on promptly at 6 o'clock and the others would leave the air promptly at 6 o'clock? Is not that your point?

The CHAIRMAN. Yes. In other words, today they are operating on the basis that in the daytime the other stations operate on a reduced coverage. Now, why not let them continue to operate on a reduced coverage, let us say, until 6 o'clock? Instead of having sunrise and sunset, then you just have a flat cutoff at 6 o'clock instead of sunrise and sunset.

Mr. CROSS. Mr. Chairman, may I answer that?

The CHAIRMAN. Mr. Cross.

Mr. CROSS. We are dealing here, sir, with laws of nature and any way you maneuver this thing after the sun goes down, the signal has an entirely different propagation characteristic than it does during the daytime. Any way you meddle with this thing, you still come out the same way. You just cannot do it.

The CHAIRMAN. That is what I am trying to get an answer to.

Mr. BARR. I am sorry, sir, but I did not understand it that way.

Mr. SPRINGER. Mr. Commissioner, I would like to know just what you are stating. Are you stating to me categorically as an engineer—and that is what you are—that what the chairman of the committee has proposed cannot be done?

Mr. CROSS. Not without producing interference, in my opinion.

Mr. SPRINGER. Interference in what?

Mr. CROSS. Of one form or another. You do not just take this station, sir, and say this station versus that station. You take the totality of the stations in arriving at your interference, and as long as you are dealing with a natural phenomenon where the nighttime propagation is different from the daytime, you cannot get there without bleeding to death for it.

Mr. SPRINGER. You mean you cannot remove this interference by starting it at an hour where one is interfering with the other and you remove that cause of interference?

Mr. CROSS You could put the station off the air.

Mr. SPRINGER. What I was saying is that he does not go to 5 kilowatts. He is operating on 1 kilowatt.

Mr. CROSS. Some of them are 5 kilowatts all the time, day and night.

Mr. AVERY. What I believe he is trying to say is this: Irrespective of the power emanation, these laws of nature apply?

Mr. CROSS. Yes, sir.

The CHAIRMAN. You may proceed, Mr. Barr.

Mr. BARR. I would like to get this particular point straightened out at least in my own mind.

The CHAIRMAN. Well, that might be helpful to us.

Mr. BARR. Of course, the whole presentation here was based on changing the hours of operation of the daytime stations; whereas, they are now restricted to operation between local sunrise and local sunset, which varies over the whole year from sometimes as late as 9 o'clock in the morning and as early as 4:30 or 5 o'clock in the evening up until as early as 4 o'clock in the morning and as late as 8 and sometimes 9 in the evening. Those are the hours that the daytimers are permitted to operate now, but it still follows that they will be permitted to operate from local sunrise to local sunset except during the months when local sunrise occurs after 6 o'clock and during the months when local sunset occurs before 6 o'clock.

So, all of this presentation here has been based on what happens during that variable period of 45 minutes to an hour and a half at Mattoon, Ill. The maximum period, I think, is something over 2 hours, depending upon the latitude, but the whole presentation depends upon what happens during that variable period for the 4 or 5 months during the year, and the suggestion is that we permit them to run from 6 a.m. until 6 p.m. during those months when they would otherwise have to shut down.

This interference presentation was based on that and the reason for it was the fact that the nighttime conditions obtain during those periods.

Getting back to your question of a moment ago, you stated what happened to a daytime station. We show the curtailment of a typical regional and the curtailment of the two clear-channel stations and what

happens to the daytime station itself. Again, I think this is typical: WLBH operating with 250 watts, his normal daytime service area encompasses a radius of about something in excess of 30 miles. Due to this skywave interference effect from the other stations on the channel, he begins to feel that interference effect as early as 2 hours before sunset and his service is curtailed to this extent [indicating]. It comes down to a matter of a few miles. But for the period of about an hour before sunset it is curtailed to this extent [indicating]. This represents less than one-fourth of the area here [indicating] of course.

At sunset, or a few seconds after sunset, if the other stations on the channel continue to operate and if they had been operating during the daytime hours, his service would be curtailed to this extent [indicating] and eventually, during the period of about an hour after sunset, it is down to a matter of just a mile or so service area; that is, considering all the other stations on 1170 kilocycles do continue operating with their daytime facilities, which is what this bill is directed at. That would happen in some cases and in some cases it would not be so bad. However, we have cases where I think it would be almost prohibitive to permit two stations to operate for an extended period after sunset.

That is about it, Mr. Chairman.

The CHAIRMAN. Did you ever try an experiment to see how this would actually operate in a given area?

Mr. BARR. No, sir; it never has been tried. That is a kind of complicated thing to do with our machinery under which the communities have to operate. Personally, I have said a number of times that I would like very much to see it done, but you have the license modifications and all that sort of thing messed up in it.

The CHAIRMAN. I do not know, but it seems to me that the problem you want to reach in order to prove a point could be done in this fashion: Why do you not take out a small area somewhere and try it for 30 days and see what happens? It may either make or break your problem.

Mr. BARR. In order to get a representative picture, I think you should take at least one channel and probably several channels and just let all stations continue their operations during December, for instance.

The CHAIRMAN. Why would you have to have several channels? It seems to me that you could just take one small area and make this test.

Mr. BARR. The Chairman of the Commission was just pointing out to me that these considerations we used to depict this interference in the first place are based on experiments themselves. So, this is not entirely a theological or guesswork consideration.

The CHAIRMAN. I thought it was based on engineering findings.

Mr. BARR. Well, it is engineering findings and it was derived empirically from observations of the way sky waves and radio waves behave. So, it is not an entirely theoretical consideration.

Mr. AVERY. I did not quite understand your statement, Mr. Barr.

Mr. BARR. To go back to the chairman's question concerning the possibility of just letting the stations on a given channel continue operations to see how it worked out, our Chairman of the Commission pointed out to me that the considerations we used to draw these charts were based on experimental operations.

The CHAIRMAN. Suppose, Mr. Ford, you tell us about that.

Mr. FORD. For instance, we have stations operating on regional channels. We know from the actual interference conditions that have been studied of the way stations operating on the same channel what the effect would be. For instance, we have six local channels and we have about 150 to 200 stations on each of those local channels. So, we do know from actual measurement what the effect of that interference is.

The CHAIRMAN. But, I know you brought that about by consideration of an individual station.

Mr. FORD. Yes, sir; that is right.

The CHAIRMAN. Why do you not put the whole thing in the pot sometime and just see what reaction you get?

Mr. BARR. Well, the experiment would be primarily directed at the listeners and what they would be willing to accept.

The CHAIRMAN. And, I think that is where you would get your answer—from the listeners.

Mr. FORD. If the object is to pretty well limit radio nighttime service, then we could accomplish it, but we just think that this——

The CHAIRMAN. No; the object is not to limit anything. The object is to prove something. That is what I am talking about.

Mr. FORD. Well, on the basis of the actual observations of the characteristics of radio signals, and on the basis of the information the Commission has in the studies, we know——

The CHAIRMAN. I know that you know, but do the people know?

Mr. FORD. If you take the radio away from them so that they could understand what this problem is? The Commission has gone through that and has unanimously determined that on the basis of the technical data we have that we just know what the results are going to be and we just do not feel like we should take radio service away from the people in order to prove that it will happen to them.

The CHAIRMAN. Well, the problem is growing year by year. You have 40 percent of the operating daytime stations, and that is 40 percent, I suppose, of the population of the country?

Mr. BARR. No, sir.

Mr. FORD. If there was any way physically——

The CHAIRMAN. I do not know about that because you can get into these larger towns and you have these daytime stations operating too and in some of them you have several operating there.

Mr. FORD. I think I misunderstood what you intended.

The CHAIRMAN. I am talking about whether it is 40 percent of the population or 40 percent of the total service?

You say 1,400. Our colleague from Illinois a while ago said 1,700 daytime stations. What I am pointing up to you is the fact that you have 1,400 stations operating in the daytime and they serve a population——

Mr. FORD. They do.

The CHAIRMAN. Which population they contend is behind them on this problem.

Mr. FORD. They serve a very substantial population.

The CHAIRMAN. And, it would seem to me that the Commission would be interested in making it very clear to the people who are interested in it—the listeners—what the situation would be if your contention is correct.

Someone said a while ago it would be like turning off the traffic lights during the morning and evening rush hour. Well, I am not sure that you can characterize it that way. However, we had an experiment on that here one time when we had the bus strike, and in the morning and evening rush when you put a cop out there on the street and turned off all the traffic lights, the traffic moved twice or three times as fast as it normally does.

I am talking about trying an experiment somewhere which will show the average listener what the situation is, because they do not understand all of the technical aspects that you are setting forth here. It is hard for myself to understand it.

I think our best approach to this is not to ask you any more questions about it at this time, but to hear the other side and see what they have to say as to what they could prove. I think we ought to give them the opportunity of testifying and after we hear them present their side, we probably would be in a better position to ask you more intelligent questions.

Mr. AVERY. Mr. Chairman, I think I have a question which is intelligent and I will let the record speak for itself:

Did I understand you, Mr. Ford, to say that there is a freeze presently on the assignment of local licenses or not on local channels?

Mr. FORD. No, sir, I did not make that categorical statement.

Mr. AVERY. Then, let me ask the question in the positive.

Is there an increasing number of local assignments being made each year?

Mr. FORD. Yes, sir.

Mr. AVERY. Is it not fair to conclude that as more local stations come on the air it would lessen the unfavorable effect of letting the daytime stations continue broadcasting past sunrise and sunset?

Mr. FORD. You mean local daytimers or local 250-watt unlimited stations?

Mr. AVERY. Local, unlimited stations. As they increase in population——

Mr. FORD. Those are not increasing very rapidly; that is true.

Mr. AVERY. They are not increasing very rapidly—the local stations?

Mr. BARR. The principal emphasis right now is on daytime stations. They are the ones which have grown the fastest during the past few years.

Mr. AVERY. Well, let me try it again:

Since we have more local stations with unlimited time licensed than we did 10 years ago, would not the impact on the listening public be less if we allowed the daytime stations to continue their broadcasting past sundown? The impact on the listening audience would generally be less unfavorable than it would have been before we had as many daytime stations?

Mr. FORD. I think these charts show the impact on the daytime station if it continued to operate after sunset and also the impact on the full-time station if the daytime station continues to operate after sunset. When you get the populations affected, you find that a much greater population would lose service by permitting the daytime station to continue operating after sunset than would be gained by the additional service the daytime station would render.

Mr. AVERY. Well, I could certainly agree with you 10 years ago and, surely 25 years ago, but it seems to me that picture is changed somewhat.

I live in a rural area and despite all of the impediments we establish by legislation, the population is continuing to shift into metropolitan areas; that, plus the fact that there are more local stations on the air, it seems to me there will be less people threatened with no service at all than there would be when we had just a few local stations on the air.

Mr. FORD. I think there are about 1,000 communities who have only one daytime-only station. The additional stations are in multiple station markets throughout the country. Therefore, the addition of one 250-watt station does not serve the rural areas who do not have the service. The whole basis for the clear channel and the regional type station is to reach rural communities, communities which do not have an adequate radio service. Whereas, the daytime station, of course, does not furnish any rural service at night. Therefore, if you cut down the amount of service at night, the people that you are principally affecting are the people in the remote areas in the rural sections.

Mr. AVERY. My point was that there are less of those people, though.

Mr. FORD. Actually, if you look at a chart on nighttime primary service today of radio stations and the nighttime service of radio stations 10 years ago, there is very little difference. So, I think that the rural people are depending on this skywave service and I think, roughly, 50 percent of the land area of the United States depends on this skywave service. If you cut that out, you do reduce service to these people in the rural areas. The additional local stations that have been put on the air in the past 10 years have not contributed any, or very little, to the nighttime service to these people who have been relying on skywave signals.

Mr. AVERY. Well, of course, the ones that have gone on as daytime stations, if they had to go off at sunset, obviously, they could not contribute anything to that situation.

Mr. FORD. I understood your question was predicated upon the full-time local station.

Mr. AVERY. My original question was.

That is all, Mr. Chairman.

The CHAIRMAN. On these clear-channel stations—say, in New Orleans, if you have one down there——

Mr. FORD. Yes, sir.

The CHAIRMAN. I believe the station in New Orleans is WOW.

Mr. FORD. It is WWL.

The CHAIRMAN. Can a signal from WWL in New Orleans be received all over the country?

Mr. FORD. Actually, that gets into the distance of skywave signals. The signal from the station can be received, theoretically, all over the country. Actually, it is a secondary service area which has a limitation which goes out——

Mr. BARR. It is a matter of time.

The CHAIRMAN. It is what?

Mr. BARR. It is a matter of the period of the year that you are listening rather than the geography. For instance, in some seasons

of the year you may able to hear it very clearly in all sections of the United States and at other times of the year, depending on sun spots and that sort of thing, the ability to receive that signal would be more limited.

May I say in connection with WWL they have a directional antenna designed—and it is one of the rare instances where they use the directional antenna—to project the signal into the service areas rather than to protect from other stations interference directing the majority of their radiation to the north.

I think a Catholic brotherhood runs that station.

The CHAIRMAN. It is Loyola.

Mr. BARR. They had the services of a very fine engineer who designed that antenna for the specific purpose of getting a signal up into the New York area. They are interested in a listening audience that far north.

The CHAIRMAN. Well, I understood you said a while ago that you thought you had a plan underway that might resolve some of these problems and I thought you had in mind the FM situation.

Mr. FORD. That is correct. In the statement which we presented to the committee we pointed out that many of the arguments which you are here advancing as to why this bill should pass and give additional service to these areas that you have the daytime-only operation, in most of those areas there are available channels—FM channels—which could be applied for and which would give a much greater signal at night and with unlimited time than this additional service which is requested here without the interference problems which we are faced with in this situation.

The CHAIRMAN. How many FM stations do we have in the country?

Mr. FORD. 700 which are actually on the air and there are about an additional 150 authorized. The additional 150 are noncommercial.

The CHAIRMAN. Are what?

Mr. FORD. Are noncommercial, such as educational and that sort of thing.

Mr. BARR. There has been a rather sustained growth, or an increased growth, in FM stations over the last 2 years and in people who are interested in licensing FM stations.

Mr. AVERY. Is there any difference in receivers for AM and FM?

Mr. BARR. The big disappointment of Major Armstrong's life was that they did not get receivers distributed so we could have FM years ago.

Mr. AVERY. I thought the record should show that. Does it require some kind of translator? Can an apparatus be installed in a conventional set, or does it require an entirely new set?

Mr. BARR. An entirely new set is the only practical way.

The CHAIRMAN. You have 100 channels allocated to FM, is that right?

Mr. BARR. Yes, sir.

The CHAIRMAN. How many stations can you put on those 100 channels?

Mr. FORD. 3,000 to 5,000. That is theoretical, Mr. Chairman.

Mr. BARR. Of course, the number of stations you would put on a channel would be governed, for one thing, by what you were trying to accomplish. We made provision initially for accommodating on the

order of 3,000 or 4,000 FM stations, with the thought that that could be substantially increased.

The CHAIRMAN. Under present procedure of the Commission, you think you would put a minimum of some 3,000 stations on FM.

Mr. BARR. There is no question about that.

The CHAIRMAN. You have only 700 now.

Mr. BARR. That is right.

The CHAIRMAN. What percentage of the receiving sets being produced now will accommodate both AM and FM?

Mr. FORD. Of broadcast receivers manufactured, about 1 or 2 percent now being produced are FM sets. The remainder are AM. I think that is correct. If that figure is wrong, we will correct it in the record.

The CHAIRMAN. What is the difference in the cost of producing FM and AM together and just producing AM?

Mr. BARR. The difference in the sets on the market right now is roughly 2 to 1 for the cheapest sets, I think, but it is the opinion of most of the engineers that I know that there would be no problem of mass-producing FM sets at a price comparable to AM. There should be no disparity between them at all. As a matter of fact, there have been a few FM sets manufactured to retail for on the order of $20 to $25, which is certainly comparable to the cheaper AM sets.

The CHAIRMAN. Mr. Ford, has your Commission ever pursued this with the industry to see why they do not start producing sets to receive both AM and FM?

Mr. FORD. For a number of years the Commission has been trying to encourage the development of FM. We have been somewhat encouraged in the last 2 years or so because of the increased number of applications we have received for FM stations. So far as I know, the Commission has not had any project with respect to the industry itself as to why they do not produce additional FM sets so they can be produced on a mass basis at a cheaper price.

The CHAIRMAN. How much increase in cost would there be to the transmitter operation on FM in addition to AM?

Mr. FORD. The best estimate we have now is that it would cost close to $20,000 for an AM station to transmit, in addition to that, an FM signal.

The CHAIRMAN. I have been getting an indication of a lot of interest from many stations—for example, one in my hometown of El Dorado, Ark., which is a 5,000-watt daytime AM station. If that station were to obtain, as an example, a license for an FM operation, how much would it cost them to put in what is necessary to broadcast over FM along with AM?

Mr. FORD. Our best estimate is near $20,000.

The CHAIRMAN. Only $20,000?

Mr. FORD. I think your question was misunderstood. The $20,000 had to do with operation, not the cost of the equipment. Give me a minute, and I will see if I cannot get a better figure on the cost of the equipment which would be required.

(Witnesses conferring.)

Mr. FORD. Mr. Chairman, the applications which we have been receiving from AM stations requesting authority to operate an FM station in addition have indiacted that between $4,000, $6,000, or

$8,000 is required using the AM tower, and so on, in order to buy the transmitter. That is the construction cost that the applicants are estimating.

The CHAIRMAN. In other words, a station which has a tower operating on AM, which has all the required equipment, could for a maximum of $10,000 install what would be necessary to operate an FM station?

Mr. FORD. That is in accordance with the applications we are receiving now.

The CHAIRMAN. That is in accordance with the information you presently have.

Where would all this extra operating cost, $20,000, come in? I imagine some of these stations operate for much less than that. Is that for power?

Mr. FORD. Mr. Chairman, I think perhaps, rather than try to come to an estimate here of that figure, we would prefer, if you will permit it, to supply that for the record. We have to answer it in two different ways: The full-time AM station and the daytime. The full-time station has its staff and is duplicating the programing on its FM transmitter. So power would be substantially the only additional cost. Whereas in the daytime-only stations, their staff would leave normally at sunset, and they would have to provide staff and programing for the period after sunset. So the additional cost there would be substantially greater. I think with just a little bit of research on our part we can come up with a fairly accurate figure.

The CHAIRMAN. The same personnel providing the program could broadcast over both AM and FM at the same time.

Mr. FORD. That is right. So in a full-time station, you have the initial capital costs, and then you have the power, and not too much other expense; but in a daytime-only station, of course, you would have to supply programing plus staff after the AM transmitter went off the air. So your costs would mount considerably.

Mr. AVERY. You do have some stations like that, do you not?

Mr. FORD. Oh, yes.

Mr. AVERY. We have one in my community.

The CHAIRMAN. What?

Mr. AVERY. Which has both AM and FM transmitters, and the FM transmitter is some 150 miles away from the AM transmitter, in an area where I suppose that is the only signal which was available.

The CHAIRMAN. The FM transmitter is 150 miles from the AM transmitter?

Mr. AVERY. Yes.

The CHAIRMAN. And it is the same station?

Mr. AVERY. Yes.

Mr. FORD. There must be some confusion in that.

Mr. AVERY. There may be. It is a Kansas City, Mo., station. They have an FM transmitter at Cloud County, Kans., which is over 150 miles away. That is the way their station is carried.

The CHAIRMAN. And they are serving Kansas City?

Mr. AVERY. Yes. The FM tower is not serving Kansas City. That is serving the area 150 miles away, but it is the same program which is broadcast over each transmitter.

The CHAIRMAN. It is serving two different areas, though.

Mr. AVERY. Yes; that would be correct.

Mr. FORD. I think that straightens it out.

The CHAIRMAN. Have you any stations which operate AM and FM daytime, and then the AM goes off at sundown and the FM operates at night?

Mr. FORD. Yes, sir; there are quite a few of those.

The CHAIRMAN. How are they getting along?

Mr. FORD. I am told there are three now represented in the room which have that type of operation. Of course, from their experience they would be in a better position to say how they are getting along than we would. Whether that would be typical of all the stations in that situation, of course I am not prepared to say.

The CHAIRMAN. This is a problem similar to the UHF and VHF problem in television, is it not, except not to that degree?

Mr. FORD. They are two different services supplying the same type of aural signal; yes, sir.

The CHAIRMAN. You think you have made a little more progress with this than you have with the other?

Mr. FORD. Yes, sir. Here we believe FM does put out a very excellent signal.

The CHAIRMAN. You mentioned the treaty situation, which seems to me to be a very important part of this whole consideration. Why has the State Department not seen fit to take any interest in this?

Mr. HYDE. Mr. Chairman, as the committee may know, a member of the Commission was appointed to represent the United States in the negotiations with our neighboring countries. I had that honor, and associated with me was Commissioner Cross, then an officer of the State Department. I am sure the State Department expects that we would be in position to explain the considerations, and to advise the committee, if they are interested, as to the negotiations.

The CHAIRMAN. I am sure that is true, Commissioner Hyde. But from my experience in other matters, the State Department does not assume many things.

Mr. HYDE. We have not asked the State Department to participate in these hearings but we have been commissioned in the recent past to present the radio case, and I believe we would be expected to.

The CHAIRMAN. We sent notices to the State Department. We received a letter from the Bureau of the Budget, which, I assume as usual is speaking for the administration on it. They seem to rely on the Commission to carry the load for them.

Mr. HYDE. Mr. Chairman, in the recent hearings when the Mexican and NARBA agreements were under consideration, the Commission provided the main testimony explaining them. The Department of State did have an officer present who stated that the State Department fully supported them and urged their ratification. They did ask us to supply the explanations, which we did.

Mr. CROSS. Of course, I cannot speak for the State Department now, but at the time I was with the State Department and speaking for them, they considered that this was a domestic matter and, as such, they wanted the Commission to carry the ball insofar as the negotiations were concerned, and they were concerned only from the foreign policy aspects of it.

The CHAIRMAN. It occurred to me that the State Department would be interested in this from the standpoint of the treaties.

Mr. CROSS. As Commissioner Hyde said, the State Department recommended the ratification of both treaties at the time they were under consideration by the Senate.

The CHAIRMAN. I think that will be all for the moment.

Mr. Commissioner, would you mind coming back for some more questions, if the committee decides that it is advisable a little later on after we hear some of the other witnesses?

Mr. FORD. Yes, sir; we shall be delighted to come back and render any assistance possible.

The CHAIRMAN. Thank you very much. I appreciate, on behalf of the committee, your cooperation in helping to make a record and in our effort to do what is in the public interest in view of all the positions we have here.

The committee will adjourn until 2 o'clock, at which time Mr. J. R. Livesay, from Mattoon, Ill., will be the first witness.

(The following information was later received from Mr. Ford:)

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D.C., July 13, 1960.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: In the course of the proceedings before the Subcommittee on Amendments to the Communications Act regarding the operating hours of daytime broadcast stations (H.R. 6676, H.R. 6868, H.R. 8286, H.R. 9627, H.R. 10275), the Commission was asked to furnish certain additional information and to respond to several specific questions.

The information requested is included herewith as are several other items to which there is reference in the testimony and which we believe will facilitate consideration of the matter under study. Additionally, comments responsive to the questions asked by the committee are included and we have also taken advantage of the opportunity to comment in some detail on certain aspects of the proceeding in which we feel that clarification is desirable and that the Commission's views should be indicated.

When the subcommittee adjourned on June 17, 1960, it was not clear whether the Commission or its Chairman would be asked to return for a further statement or for questioning. Please be advised that I, as Chairman, or any of the Commissioners, will be pleased to appear at the convenience of the committee at any time. We believe, however, that with the inclusion of the attached material the record properly reflects our view with respect to the main points concerning the legislation. With this purpose we respectfully request that the material be included in the record.

By direction of the Commission:

FREDERICK W. FORD, *Chairman.*

MATERIAL SUBMITTED TO HOUSE SUBCOMMITTEE ON BILL TO EXTEND OPERATING HOURS OF DAYTIME BROADCASTING STATIONS

1. Current statistics on number and classification of U.S. standard broadcast stations.
2. List of U.S. class I–A channels and stations.
3. List of U.S. class II stations which operate at night on U.S. class I-A channels.
4. List of U.S. class I–B channels and stations.
5. Information on cost of adding FM facilities to a small or medium power AM station.
6. Copy of section 2.405 of Commission rules.
7. Copy of Commission order No. 74 (forerunner of present sec. 3.87 of rules).
8. Copy of section 3.87 of Commission rules.

Standard broadcast stations authorized in the United States and possessions as of June 1, 1960

Clear channels	Daytime or limited time	Unlimited time	Total
U.S. I-A: [1]			
Class I-A stations		25	25
Class II stations	59	9	68
Canadian I-A: [1] [2] Class II stations	186	40	226
Mexican I-A: [2] Class II stations	267	6	273
Bahamas I-A: [1]			
Class I-B stations		1	1
Class II stations	13	5	18
I-B channels: [1]			
Class I-B stations		32	32
Class II stations	77	109	186
Regional channels: [3] Class III stations	1,039	790	1,829
Local channels: Class IV stations	[4] 39	891	930
Grand total	1,860	1,908	3,588

[1] The NARBA provides priority for both a class I-A station and a class I-B station on each of 3 channels: 640 kilocycles, 1010 kilocycles, and 1540 kilocycles. In these instances the class I-B station is included as an unlimited time station under the country having the class I-A priority.

[2] The NARBA accords priority for I-A operation to Canada on 540 kilocycles. The United States-Mexico agreement accords priority for I-A operation to Mexico on the same channel. In this instance the U.S. stations are included as unlimited stations operating on a Canadian I-A channel.

[3] Includes a small number of class IV stations operating on regional channels.

[4] Includes "specified hour" stations not sharing time.

Source: Federal Communications Commission.

Summary

Class of station	Daytime and limited time	Unlimited time	Total
Class I-A		25	25
Class I-B		33	33
Class II	602	169	771
Subtotal, stations on clear channels	602	227	829
Class III	1,039	790	1,829
Class IV	39	891	930
Total stations	1,680	1,908	3,588

Class I-A AM radio stations as of June 1, 1960

Frequency	Call letters	City and State	Licensee
640	KFI	Los Angeles, Calif	Earle C. Anthony, Inc.
650	WSM	Nashville, Tenn	WSM, Inc.
660	WNBC	New York, N.Y	NBC, Inc.
670	WMAQ	Chicago, Ill	Do.
700	WLW	Cincinnati, Ohio	Crosley Broadcasting Corp.
720	WGN	Chicago, Ill	WGN, Inc.
750	WSB	Atlanta, Ga	Atlanta Newspapers, Inc.
760	WJR	Detroit, Mich	WJR, The Goodwill Station, Inc.
770	WABC	New York, N.Y	American Broadcasting-Paramount Theaters, Inc.
780	WBBM	Chicago, Ill	CBS, Inc.
820	WFAA/WBAP	Dallas/Fort Worth, Tex	A. H. Belo, Corp.; Carter Publications, Inc.
830	WCCO	Minneapolis, Minn	Midwest Radio-TV, Inc.
840	WHAS	Louisville, Ky	WHAS, Inc.
870	WWL	New Orleans, La	Loyola, University.
880	WCBS	New York, N.Y	CBS, Inc.
890	WLS	Chicago, Ill	WLS, Inc.
1020	KDKA	Pittsburgh, Pa	Westinghouse Broadcasting Co., Inc.
1040	WHO	Des Moines, Iowa	Central Broadcasting Co.
1100	KYW	Cleveland, Ohio	Westinghouse Broadcasting Co., Inc.
1120	KMOX	St. Louis, Mo	CBS, Inc.
1160	KSL	Salt Lake City, Utah	Radio Service Corp. of Utah.
1180	WHAM	Rochester, N.Y	Genesee Broadcasting Corp.
1200	WOAI	San Antonio, Tex	Southland Industries, Inc.
1210	WCAU	Philadelphia, Pa	CBS, Inc.

Unlimited class II stations operating on U.S. class I–A channels

Channel	Call letters	Licensee	Location
650 kilocycles	KPOA	Radio Hawaii, Inc.	Honolulu, Hawaii.
660 kilocycles	KFAR	All Alaska Broadcasters, Inc.	Fairbanks, Alaska.
760 kilocycles	KGU	Advertiser Publishing Co., Ltd.	Honolulu, Hawaii.
770 kilocycles	KOBA	Albuquerque Broadcasting Corp.	Albuquerque, N. Mex.
830 kilocycles	KIKI	KIKI, Ltd.	Honolulu, Hawaii.
870 kilocycles	KAIM	Christian Broadcasting Association	Do.
870 kilocycles	WHOA (CP)	Continental Broadcasting Corp.	San Juan, P.R.
1030 kilocycles	WBZA	Westinghouse Broadcasting Co., Inc.	Springfield, Mass.
1040 kilocycles	KHVH	Kaiser Hawaiian Village Radio, Inc.	Honolulu, Hawaii.

Class I–B AM radio stations as of June 1, 1960

Frequency	Call letters	City and State	Licensee
680	KNBC	San Francisco, Calif.	National Broadcasting Company, Inc.
710	WOR	New York, N.Y.	RKO General, Inc.
710	KIRO	Seattle, Wash.	Queen City Broadcasting Co.
810	KGO	San Francisco, Calif.	American Broadcasting-Paramount Theatres, Inc.
810	WGY	Schenectady, N.Y.	General Electric Co.
850	KOA	Denver, Colo.	Metropolitan Television Co.
1000	WCFL	Chicago, Ill.	Chicago Federation of Labor.
1000	KOMO	Seattle, Wash.	Fishers Blend Station, Inc.
1030	WBZ	Boston, Mass.	Westinghouse Broadcasting Co., Inc.
1060	WRCV	Philadelphia, Pa.	National Broadcasting Co., Inc.
1070	KNX	Los Angeles, Calif.	Columbia Broadcasting System, Inc.
1080	WTIC	Hartford, Conn.	Travelers Broadcasting Service, Corp.
1080	KRLD	Dallas, Tex.	The Times Herald Printing Co.
1090	KTHS	Little Rock, Ark.	Radio Broadcasting, Inc.
1090	WBAL	Baltimore, Md.	The Hearst Corp.
1110	KFAB	Omaha, Nebr.	KFAB Broadcasting Co.
1110	WBT	Charlotte, N.C.	Jefferson Standard Broadcasting Co.
1130	KWKH	Shreveport, La.	International Broadcasting Corp.
1130	WNEW	New York, N.Y.	Metropolitan Broadcasting Corp.
1140	WRVA	Richmond, Va.	Larus & Bro. Co., Inc.
1170	KVOO	Tulsa, Okla.	Southwestern Sales Corp.
1170	WWVA	Wheeling, W. Va.	Storer Broadcasting Co.
1190	WOWO	Fort Wayne, Ind.	Westinghouse Broadcasting Co., Inc.
1190	KEX	Portland, Oreg.	Do.
1500	WTOP	Washington, D.C.	The Washington Post Co.
1500	KSTP	St. Paul-Minneapolis, Minn.	KSTP, Inc.
1510	WLAC	Nashville, Tenn.	WLAC, Inc.
1510	KGA	Spokane, Wash.	Gran Broadcasting Co.
1520	WKBW	Buffalo, N.Y.	WKBW, Inc.
1520	KOMA	Oklahoma City, Okla.	Storz Broadcasting Co.
1530	KFBK	Sacramento, Calif.	McClatchy Newspapers.
1530	WCKY	Cincinnati, Ohio.	L. B. Wilson, Inc.
1540	KXEL	Waterloo, Iowa.	KXEL Broadcasting Co., Inc.
1560	KPMC	Bakersfield, Calif.	Pioneer Mercantile Co.
1560	WQXR	New York, N.Y.	Interstate Broadcasting Co., Inc.

TYPICAL FM BROADCAST STATION

Approximately half the FM station applicants are licensees of AM broadcast stations. A typical FM station proposed by such an applicant, a station which could be expected to provide service to a community of from 50,000 to 100,000 persons, would use a 1-kilowatt transmitter, a 4-bay antenna, the installation to be made at the AM site with the FM antenna mounted on the AM antenna tower, the AM studio facilities to be used for FM also, the installation to be operated by existing AM personnel, and the programing to be a duplicate of the AM programing. The cost of such a station would be approximately as follows:

1-kilowatt transmitter	$5,000–$5,500
Antenna system	2,000
Monitoring equipment	1,500– 2,000
Engineering fees, legal fees, installation, miscellaneous	3,000

The cost of operation of such a station for the first year would probably be between $3,000 and $5,000 (consisting of power, maintenance, and possibly some additional help).

A new application (BPH–2991) for an FM station in Fort Pierce, Fla., specified an installation similar to the above and showed a cost of construction of $12,193 and an operating cost of operation the first year of $4,000.

If a 5-kilowatt transmitter were used in the above case in place of the 1-kilowatt transmitter, the cost would be approximately $7,000 more.

Should an applicant have no AM facilities, his cost of construction would also include cost of land, buildings, studio equipment, and an antenna supporting structure. The cost of operation the first year, for approximately 80 hours per week operation, would include the salaries of personnel and costs of programing in addition to power and maintenance costs, and would probably be in the neighborhood of $30,000.

SECTION 2.405. OPERATION DURING EMERGENCY

The licensee of any station, except amateur, may, during a period of emergency in which normal communication facilities are disrupted as a result of hurricane, flood, earthquake, or similar disaster, utilize such station for emergency communication service in communicating in a manner other than that specified in the instrument of authorization: Provided, (a) That as soon as possible after the beginning of such emergency use, notice be sent to the Commission at Washington, D.C., and to the Engineer in Charge of the district in which the station is located, stating the nature of the emergency and the use to which the station is being put, and (b) That the emergency use of the station shall be discontinued as soon as substantially normal communicatiton facilities are again available, and (c) That the Commission at Washington, D.C., and the Engineer in Charge shall be notified immediately when such special use of the station is terminated: Provided further, (d) That in no event shall any station engage in emergency transmission on frequencies other than, or with power in excess of, that specified in the instrument of authorization or as otherwise expressly provided by the Commission, or by law: And provided further, (e) That the Commission may, at any time, order the discontinuance of any such emergency communication undertaken under this section.

FEDERAL COMMUNICATIONS COMMISSION,
Washington, D.C., June 10, 1940.

ORDER NO. 74

At a meeting of the Federal Communications Commission held in its offices at Washington, D.C., on the 7th day of June 1940:

Pursuant to authority contained in Section 303 of the Communications Act of 1934, as amended,

IT IS ORDERED, That pending further Order of the Commission or amendment of the Rules and Regulations:

(a) the provisions of Sections 3.6, 3.8, 3.9, 3.23, 3.79, and 3.84 shall not prohibit the operation between four o'clock A.M., local standard time, and local sunrise, of standard broadcast stations licensed to operate during daytime hours or limited time hours;

(b) nothing contained in outstanding instruments of authorization for such stations shall prohibit such operation;

(c) the period 4:00 A.M. to 6:00 A.M., local standard time, shall not be included in determining compliance with Sec. 3.71 (as amended June 4, 1940) of the Commission's Rules and Regulations.

This Order shall become effective immediately.

FEDERAL COMMUNICATIONS COMMISSION,
T. J. SLOWIE, *Secretary.*

SECTION 3.87. PROGRAM TRANSMISSION PRIOR TO LOCAL SUNRISE

(a) The provisions of Sections 3.6, 3.8, 3.9, 3.10, 3.23, 3.79, and 3.84 shall not prevent the transmission of programs between 4 o'clock a.m., local standard time, and local sunrise, of standard broadcast stations with their authorized daytime facilities: *Provided*, That the provisions of this section shall not extend to:

(1) Stations regularly sharing time during daytime hours either under licenses pursuant to which time-sharing agreements have been entered into or licenses

specifying hours of operation, unless time-sharing agreements have been reached covering such operation prior to local sunrise. Sections 3.74, 3.77, and 3.78 shall be applicable to such agreements.

(2) Any Class II station causing interference, as determined by the standard broadcast Technical Standards of this subpart, by use of its daytime facilities within the 0.5 mv/m 50 percent skywave contour of any Class I station of the United States, Mexico, or of any country party to the North American Regional Broadcasting Agreement, except (i) where the Class I station is located east of the Class II station in which case operation may begin at local sunrise at the Class I station; (ii) where an agreement has been reached with the Class I station to begin operation prior to local sunrise.

(3) Operation by use of its daytime facilities of any Class II station on any Class I–A channel not assigned to the United States under the North American Regional Broadcasting Agreement or under the U.S./Mexican Agreement.

(4) Class IV stations authorized for operation with daytime power in excess of 250 watts.

(b) Any station operating during such hours receiving notice from the Commission that undue interference is caused shall refrain from such operation during such hours pending further notice from the Commission.

(c) Nothing contained in outstanding instruments of authorization for such stations shall prohibit such operation except as herein provided.

(d) The period 4 a.m. to 6 a.m., local standard time, shall not be included in determining compliance with Section 3.71.

(e) Restrictions imposed by Section 3.187 on daytime operations shall apply to presunrise operation under this section.

[FCC 60–847 91062]

SUPPLEMENTARY STATEMENT OF THE FCC REGARDING H.R. 6676, 6868, 8286, 9627, AND 170275 CONCERNING EXTENDED OPERATING HOURS FOR DAYTIME BROADCASTING STATIONS

The Commission has been asked to submit a list of U.S. Class I stations (the so-called Clear Channel stations) and an estimate of the cost of adding FM to a small or medium size AM broadcasting stations. This has been done. Additionally, we have included current statistics on the total number and classification of AM stations now authorized and copies of Commission rules concerned with the early morning and with the emergency operations of daytime stations.

The Commission would also like to take advantage of this opportunity for additional comment on some of the matters and problems that have been discussed.

First, there may be an implication in some portions of the record that the daytime six a.m. to six p.m. proposal is primarily a conflict between the Clear Channel stations and the daytime stations. This has been clarified to some extent in the latter part of the record but it should be emphasized that the problem is at least as serious, if not more so, with respect to the approximately 800 unlimited time stations on regional channels.

Also, it should be noted that of the 1,690 daytime stations authorized as of June 1, 1960 only 136 operate on the 45 Clear Channels in which the U.S. has any degree of priority. Of the remaining 1,554 daytime stations 466 operate on the 15 Clear Channels in which the U.S. does not have any degree of priority. In the Commission's opinion we could never obtain the consent of Canada or Mexico to operation of the stations on these particular 15 channels beyond sunset or before sunrise, except in accordance with the treaty requirements for protection of their stations from interference.

In connection with hearings before the Senate Foreign Relations Subcommittee on the North American Regional Broadcasting Agreement and the related agreement with Mexico we recently had occasion to query the parties to these agreements on their views concerning six-to-six operation of daytime stations. A brief discussion of the international problem and of the views expressed by the other North American countries may be helpful.

NARBA defines "daytime" in general as the time between local sunrise and local sunset at the transmiter location of the station and "nighttime" as the remainder of the day. Because of the difference in day and night propagation of radio waves it provides different technical standards for the protection of

stations from interference during the two periods. Most of the presently authorized daytime stations would have made application for nighttime operation if the technical standards for the protection of existing statons after sunset could have been met with respect to domestic assignments, foreign assignments, or both. In some instances, of course, the cost of a directional antenna system has deterred application for night operation, but, insofar as the vast majority are concerned, nighttime operation has not been feasible even with an expensive directional antenna because of interference to domestic stations, foreign stations, or both. Even if interference to domestic stations is ignored, operation of daytime stations with presently authorized facilities after sunset would, in the majority of instances, be expected to involve interference to foreign assignments in excess of that provided for in the NARBA or the United States-Mexico bilateral agreement. A similar situation would be expected with respect to the use of daytime facilities after sunset by a large proportion of stations now operating unlimited time.

During hearings on the NARBA and the United States-Mexico bilateral agreement before a Senate subcommittee of the Foreign Relations Committee, the State Department furnished the several administrations of the North American Region with copies of the subcommittee's interim report of August 1959, which contained four alternative proposals in connection with ratification of these agreements, three of which reflected, in one form or another the position espoused by the DBA with respect to operation by daytime stations beyond the hours of sunrise to sunset. The remaining alternative was for the subcommittee to recommend advise and consent without reservations of understandings in this regard.

In reply to the query, both Canada and Mexico made it clear that a provision to NARBA that would permit operation of daytime stations beyond the hours between sunrise and sunset would be unacceptable to them. Comments from Cuba, Dominican Republic, the United Kingdom (for Bahama Islands and Jamaica) and Haiti were not received.

In its final report the subcommittee recommended the action, now history, in which the NARBA and the United States-Mexico bilateral agreement were ratified without reservation or understanding.

The next point which we believe warrants some further comment concerns the engineering standards and criteria we have used to evaluate the six-to-six proposal. It has been stated that since these engineering standards originated over twenty years ago they are hopelessly out of date and are not applicable to present conditions. This point is supposed to have been confirmed by demonstrating that certain stations could be heard intelligibly at points in which these outmoded standards indicate ruinous interference. We would like to point out that while the objectives of a broadcast service and the actual nature of the service and of the associated problems can and do change with time, the physical factors governing the behavior of radio waves do not. Neither do many of the factors which affect a listener's reaction to the various degrees of interference which are usually characterized in terms such as "just noticeable", "somewhat objectionable" and "intolerable". The criteria provided for by Commission rules and which have been used in connection with the extended hours proceedings (Dockets No. 12274 & 12729) in substance defines objectionable interference as the condition which exists when the composite hourly median value of one or more undesired signals exceed one twentieth (1/20) of the value of a desired signal on ten percent or more of the days of a year. The 20 to 1 ratio of desired to undesired signal was chosen many years ago on the basis of subjective listening tests in which a majority of listeners found the 20 to 1 ratio objectionable. We know that the considerations resulting in the choice of 20 to 1 as a criteria are not changed by time.

With respect to the accuracy of predictions of interference, service, etc., it would be most unusual if a short test in a specific case confirmed the predictions. Estimates and predictions regarding service and interference are all based on long term statistical averages and probabilities. It should be noted that these criteria which are being questioned represent in large measure the considered judgments of many engineering and scientific minds throughout the entire broadcasting industry. By and large they have been and are still accepted almost universally by engineers as very meaningful and helpful tools in studying exactly the type of problem here presented. We would like to repeat, in terms of overall effects (that is, the composite service and interference produced by a number of stations operating over a substantial period of time) can

be quite accurately predicted by these criteria. The conditions with respect to skywave interference at a particular spot at a particular time in general cannot be so predicted.

The question has been raised a number to times in this proceeding as to why the desirability of daytime station operation from 6:00 a.m. until 6:00 p.m. could not be determined by a "test". The nature of such a test has not been set forth specifically. Some of the questions and comments of the Committee would imply that a limited test involving a relatively small number of stations is envisaged. Also, it would appear that evaluation of both the engineering consequences of six-to-six operation during the season when such operation would include time before sunrise and after sunset, and the actual impact on listeners is contemplated.

On the other hand, we believe it is clear that the Daytime Broadcasters Association proposal for a test contemplates operation of all daytime stations through at least one and preferably two winter seasons. The daytime broadcasters have not been clear, however, on the nature of the test. The impression is given that they are stressing the listeners reaction aspect rather than the engineering. In any event, these comments are directed at all aspects of the test problem.

If we are considering a test of listener reaction the test must be designed to compare the effects of the loss of service to the public in the listener area of the full-time stations with the effects of the added service to the public in the listener area of the daytime only stations.

In our judgment, a scientifically valid listener survey to determine this point must necessarily be quite extensive both in time and number of stations involved. A decision to change the hours of daytime stations would affect large numbers of the public. If this decision is to be made in light of a listener survey, then such a survey must be conducted in a thoroughly objective, impartial manner utilizing the best scientific techniques in this field. Nothing less is practical or desirable in the public interest.

It has been suggested that a test be held in one specific area. We do not believe that the experience in one area can be generalized to other areas. Radio service, particularly secondary radio service, is too variable to warrant drawing conclusions from the experience in one area. The basic unit of measurement would have to be one or more frequencies. This is to say, the effect of the extended hours of operation cannot be localized in terms of a comparison between the effect on the service areas of a particular daytime station and a particular full-time station but must be considered in the context of all daytime and full-time stations operating on that particular frequency. Since, however, daytime stations on any of the regional or clear channel frequencies are scattered throughout the country, a listener survey would necessarily have to concern itself with a representative sample of such areas throughout the country. Such areas would include both urban and rural locations since we are particularly concerned with maintaining service in scattered rural areas which have limited means of communication. It would not be sufficient to sample one frequency only since there would be substantial variation in the results of a test on one frequency compared to another. The tests would have to be concluded for a representative sample of frequencies.

The question may be raised as to why any specific survey needs to be conducted. Why could not the Commission merely base its decision on letters or other communication from the public involved? The Commission is strongly convinced that such an approach is wholly undesirable. The Commission's responsibility is to provide for the best service possible to most of the people, utilizing the best technical and other sources of information. It cannot rest its decision on the psychological considerations which might impel the public to protest or not to protest a change in their radio service. It is not unthinkable, for example, that "organized" public reaction might be developed by one group or another and that the letters from the public would merely measure the strength of the organizing groups.

The kind of listener test which would be required would be concerned with ascertaining, among other points, the stations listened to in order of preference from sunrise to 6:00 a.m. and from sunset to 6:00 p.m., preferably information regarding stations listened to both prior to and following the beginning of the test period in which the daytime stations were permitted to operate would be desirable. (This would, of course, not be possible for the morning test.) We would have to ascertain the number of people who gain service as a result of

the post-sunset operation of the daytime stations compared with the number of people who lose service from one or more of the full-time stations whose service would be interfered with. We would also have to ascertain the other signals available to the people who would lose service, particularly in rural area. Further, it would be important to ascertain whether the loss of service was full or partial and the quality of other signals available to the people adversely affected by the operation of the daytime stations.

To ascertain these types of information, with a scientifically designed sample which could be projected and validated for other areas, would probably require interviewing a sample of households as well as utilizing mail ballots. The interview technique is expensive while the use of the mail ballot requires the highest degree of precaution to insure that the mail responses are, in fact, valid. We speak with some experience in this field because in the Clear Channel proceeding in 1945 the Commission attempted to measure the extent of public listening to clear channel stations in the "white" areas. We contracted with the Bureau of the Census at a cost approximating $200,000 to conduct this survey. Although conducted under the best of auspices, a number of objections were raised as to the representatives of the results because of the extreme variability in the extent and quality of radio service in these areas. The difficulties encountered in that survey, which, by the way, had the full cooperation of all segments of the industry, necessarily makes us dubious as to the feasibility of obtaining a conclusive answer on listener reaction to radio service.

It is our considered conclusion that a scientifically valid sample of listener reaction in this area is a major undertaking which would require substantial funds to conduct. The Commission could not reasonably expect to conduct such a survey on its own but would probably contract the conduct of such a survey to the Bureau of the Census. While we cannot at this point specify the cost of such a project, we have reason to believe that it could run into several hundreds of thousands of dollars.

With respect to the feasibility of a test to confirm or refute the findings that have been made regarding service lost and gained, several observations are pertinent.

The interference with which we are concerned results from the so-called skywaves which are reflected back to the earth from an ionized layer of air some sixty miles high. The effect is most pronounced in the broadcast band during the nighttime hours and is of consequence during nighttime hours and during the transition period between daylight and darkness. These skywaves are reflected back with varying degrees of intensity and their strength at any particular spot, a hundred or more miles distant from the transmitter, is subject to very wide variations from minute to minute, day to day, month to month, and from one year to the next.

With respect to year to year variations skywave propagation conditions are cyclic with respect to sunspot activity. At standard broadcast frequencies skywave propagation is poorest in years having the maximum sunspot numbers. The sunspot cycle is approximately eleven years in duration. Last year the peak of sunspot activity was reached. This means that skywave propagation at these frequencies was at its poorest. In approximately 4½ years skywave propagation is expected to be at its best. There is poor correlation between corresponding points on successive sunspot cycles and likewise there is ambiguity in sunspot effect on skywave propagation from one transmission path to another. A test at this phase of the sunspot cycle will not be indicative of the true degree of skywave interference which is likely to be encountered under peak propagation conditions.

Because of these long- and short-term variations the only way skywave behavior can be predicted is on the basis of observations and measurements conducted over substantial periods of time. The predictions regarding behavior must then take the form of statistical probabilities as we have previously mentioned.

These measurements and observations have been made on a continuing basis ever since 1935 by the Commission, by the Bureau of Standards, and from time to time by industry groups under Commission direction. The results of the observations and measurements take the form of charts and graphs indicating statistical probabilities, and it is from charts and graphs that our estimates of interference in terms of long-range probabilities have been made.

In our view extensive field intensity recording programs over extensive periods of time are the only way in which "measurements" can be utilized to evaluate skywave interference effects.

While we may concede that the listeners' reactions to a large number of stations operating under conditions of substantial mutual interference may be evaluated by a carefully conducted listeners' survey, we do not believe that an evaluation of long-range interference effects can be so evaluated.

Another factor which must be considered is the modification of license imposed on those stations suffering increased interference by reason of the test operation. Section 316 of the Communications Act inhibits the Commission from actions which modify a station license without affording the licensee affected opportunity for an evidentiary hearing. The Courts have construed an action creating interference within a station's "normally protected contour" as a modification of license within the meaning of Section 316.

In consideration of the problems just discussed and the international complications and absolute restrictions imposed by our understandings with neighboring countries, we can view a mandatory requirement for a test only with extreme concern and misgivings.

In the course of these hearings the fact that some stations are already permitted by Commission rules to operate with their daytime power and facilities prior to sunrise has been discussed. The question has been raised as to the possibility of adopting a similar rule to be applied to the period between sunset and 6:00 p.m. Also the committee chairman has specifically asked the Commission why stations on regional channels are permitted to operate without notification or obtaining permission, whereas those on clear channels are required to obtain permission of the dominant stations on the channel.

The rule in question is Section 3.87 and copy has been provided for inclusion in this record. It is suggested that it be inserted at this point.

A brief discussion of the history and intent of Section 3.87 is in order at this point.

The first comprehensive analysis of a series of skywave recording and measurements was made in 1935. It was from this survey that we first obtained some understanding of the behavior of skywaves in the standard broadcasting band. From these observations and this survey, the sunrise to sunset concept for daytime operation evolved. The survey was also the basis for a complete revision of the rules governing station assignments in the standard broadcast band and removed many restrictions that had theretofore kept both the number of stations and the power they could use severely limited. In particular, provisions were made for much more extensive use of so-called regional channels permitting both higher power and more stations. Engineering standards were evolved which encouraged the use of directional antennas in particular, to improve service and decrease interference. These rules became effective in 1939 and for the first time daytime operation was defined as that period between sunrise and sunset. Before that period the operation of daytime stations and the use of daytime power by the unlimited time stations was from 6:00 a.m. until local sunset.

Although there were only a handful of daytime stations at that time, nearly all of them operated on clear channels. Additionally, most of them were operated by colleges and universities. Three well-known stations of that time were WOI at Ames, Iowa, operated by the University of Iowa; WTAW at College Station, Texas, operated by Texas A. and M.; and WTAD at Norman, Oklahoma, operated by the University of Oklahoma. Each of these particular stations had a substantial farm and rural listening audience for their 6:00, 7:00, and 8:00 a.m. programs. When the winter months forced them to curtail these operations until sunrise—which, in the case of WOI, for instance, comes at late as 7:40 a.m.—a number of complaints were made to the Commission. As a result of these complaints, the Commission took a step, the advisability and merits of which are now moot, which removed the restrictions of its new rules with respect to early-morning operation and permitted all stations to commence operation not at 6:00 a.m., as had been previously permitted, but at 4:00 a.m. This action was implemented under the title of Commission Order 74 adopted in 1940. A copy of Order 74 has been submitted for inclusion in this record. It soon appeared that this step may have gone too far both in terms of infringement on the just-signed North American Regional Broadcasting Agreement of 1937 and in terms of substantial interference to some of the clear channel stations which likewise had early-morning rural and farm audiences. The Commission then sought to formulate a rule which would permit early-morning use of daytime facilities on as extensive a basis as possible without flagrantly disregarding our international obligations under NARBA, and the instances in which severe interference to established services would be occasioned in specific cases.

Section 3.87, in practically the same form it has now, then superseded Order 74. Essentially, it attempts to permit, where international restrictions do not specifically and pointedly prohibit, the use of daytime facilities so long as there is not "undue interference" to unlimited-time stations. The rule expressly prohibits stations in certain categories from operating prior to sunrise. One such prohibition is as follows:

"Any Class II station causing interference, as determined by the standard broadcast technical standards of this subpart, by use of its daytime facilities within the 0.5 mv/m 50% skywave contour of any Class I station of the United States, Mexico, or of any country party to the North American Regional Broadcasting Agreement, except (i) where the Class I station is located east of the Class II station in which case operation may begin at local sunrise at the Class I station; (ii) where an agreement has been reached with the Class I station to begin operation prior to local sunrise."

It may be noted that (ii) above constitutes an exception to an exception. In other words, a Class II station thus prohibited from operating in the morning may also operate "where an agreement, etc." This particular provision has often been construed as permitting the Class II station to operate pursuant to *permission* of the Class I station. Perhaps the choice of language in the rule is unfortunate but this was not its intention nor has it ever been implemented on that basis. The provision was intended to permit operation where there was an understanding between the Class I station and the Class II station with respect to the hours of operation of the Class I station, the conditions being that the Class II station could operate if the Class I station was not on the air. Certainly the Commission did not then, nor has it ever considered, delegating any portion of its licensing function to any licensee.

The question has been raised as to why we cannot have a rule similar to 3.87 covering an hour or two period *after* sunset. One of the factors that motivated Commission Order 74 was that during a portion of the time between 4:00 a.m. and local sunrise at a given station a number of the other stations on the channel would not actually be in operation. For example, at 4:00 a.m. in the eastern time zone, it is 3:00 a.m. in the adjacent central time zone, and 2:00 a.m. in the mountain time zone. Even at 6:00 a.m. in the eastern time zone, it is only 5:00 a.m. in the adjacent central time zone, and a large number of the stations there would not be on the air. Under these conditions a station in the east would have to concern itself only with interference with stations primarily within its own time zone for an appreciable portion of its presunrise operation time. Additionally, consider the fact that the rule was promulgated at a time when there were very few daytime stations. We might well be able to demonstrate that under present conditions, Section 3.87 is not a particularly meritorious rule. The Commission has been concerned on several occasions with its merit but has concluded that the pattern of operation and of listening habits has become so well established that its disruption would not be in the public interest. On the other hand, we believe that our experience with Section 3.87 is such as to mitigate strongly against implementation of a similar type of rule with respect to evening operation. This is particularly true in consideration of the fact that evening operation would be concerned not with a limited number of stations utilizing daytime facilities, as is the case in the morning, but with every station on the channel. Moreover, there can be little doubt that listener habits are such that interference in evening hours would be of much greater public concern than would early morning interference when people are normally at rest.

Adopted: July 13, 1960.

(Whereupon, at 12:30 p.m., the subcommittee adjourned, to reconvene at 2 p.m., of the same day.)

AFTERNOON SESSION

The CHAIRMAN. Resuming the hearing on the various bills on daytime radio broadcasters, we have as our first witness this afternoon Mr. J. R. Livesay, chairman of the board of directors of the Daytime Broadcasters Association.

Mr. Livesay, you may proceed.

STATEMENT OF J. R. LIVESAY, CHAIRMAN, BOARD OF DIRECTORS, DAYTIME BROADCASTERS ASSOCIATION; ACCOMPANIED BY BENEDICT P. COTTONE, WASHINGTON, D.C., COUNSEL; AND EVERETT L. DILLARD, WASHINGTON, D.C., CONSULTING ENGINEER

Mr. LIVESAY. Mr. Chairman, if I may, I would like our attorney, Mr. Cottone, to add to the testimony later, if that is permissible, and also Mr. Everett Dillard, who has done some consulting engineering work for us, might help us to answer some of the questions you gentlemen might raise.

The CHAIRMAN. I think you had better identify your attorney for the record.

Mr. LIVESAY. Mr. Benedict P. Cottone, of Washington, D.C.

Mr. AVERY. Would you spell that for us?

Mr. LIVESAY. Ben Cottone, C-o-t-t-o-n-e.

The CHAIRMAN. Is this Mr. Dillard's testimony you are presenting along with yours? I have him down here as a witness.

Mr. LIVESAY. Mr. Dillard is here, but his testimony is being duplicated this afternoon and will be available as soon as the duplication is completed, sir.

The CHAIRMAN. You are not asking that he testify now and then testify later, are you?

Mr. LIVESAY. No. That is right. We are asking that he be here to assist in case any questions arise which might require his technical knowledge and ability to answer.

The CHAIRMAN. Very well.

Mr. LIVESAY. My name is J. R. Livesay. I appear here as chairman of the board of directors of the Daytime Broadcasters Association, an organization representing daytime broadcast stations throughout the United States. The membership of the association constitutes a cross section of the more than 1,500 daytime stations in operation in the United States today. Our association is appearing before your committee today to give its support and to urge the enactment of the legislation which would assure that standard broadcast stations licensed by the Federal Communications Commission to operate during daylight hours would be able to operate a minimum period from 6 a.m. to 6 p.m. The problem involved in the bills under consideration by your committee is one which has a vital bearing not only on the broadcast industry but on the public interest as well.

At the outset, in order that you may fully appreciate the importance of the problem and the need for passage of this legislation, it would be helpful to outline the basic structure of the standard broadcast service and the general history of FCC allocation policy. There are at the present time somewhat more than 3,500 standard broadcast stations in the United States which operate on the 107 channels which have been allocated to this service. Sixty of these channels, or just under 60 percent of the entire standard broadcast band, are class I channels, otherwise known as clear channels. Forty-five of the class I channels are U.S. clear channels, meaning that U.S. clear channel stations have priority of use. The remaining 15 of the 60 clear channels are for priority use of foreign clear channel stations. On 24 of the 45 U.S. clear channels, there are 24 class I–A stations. The 25 referred to this morning—there has been some question about the

I–A classification of one particular channel; namely, 1 class I–A station per channel, and on the remaining 21 clear channels there are 34 class I–B stations, or not more than 2 I–B stations per channel. The 59 clear channel stations operate full time with 50,000 watts of power, but in the clear channel proceeding, which I will soon discuss, the Commission is considering a power increase to 750,000 watts for the class I–A stations.

For over 30 years, the 24 U.S. class I–A stations have had an absolute right under the Commission's rules to exclude any other U.S. station from operating at night on their respective channels. Thus, no other U.S. station may operate at night on any of these channels unless the class I–A clear channel station gives its consent, and such consent may be given or refused, as it may please the clear channel station.

For the same period the Commission's rules have authorized the assignment on a secondary basis of class II daytime-only stations on the 24 class I–A channels. However, the Commission for 15 years has refused to act on applications for new daytime stations on such channels or to permit the existing daytime stations, which have totaled no more than 61 throughout this 15-year period, to improve their facilities. The reason for this is that there has been a freeze on such applications during this 15-year period which has been kept in effect for the alleged reason that the Commission has not wanted to complicate the decision which it may someday reach in the *Clear Channel* proceeding. This proceeding, which I will discuss more fully later, has also been pending and undecided for 15 years.

I would like to point out some other interesting statistics concerning these class I–A clear channels. For over 30 years, on four of these channels there has not been authorized any other U.S. station, day or night, besides the single class I–A clear channel station, even though the Commission's rules have authorized the assignment of daytime-only stations on these channels. These class I–A stations are station WMAQ (670 kilocycles) Chicago, owned by the National Broadcasting Co.; station WLW (700 kilocycles), Cincinnati, owned by Crosley Broadcasting Corp.; station WGN (720 kilocycles), Chicago, owned by the Chicago Tribune newspaper interests; and station WOAI (1200 kilocycles), San Antonio, Tex., owned by Southland Industries, Inc. Indeed, there is no other station besides station WGN operating day or night on the frequency 720 kilocycles anywhere on the North American Continent. On each of three other class I–A channels, there is only a single U.S. daytime-only station besides the full-time 50,000-watt clear channel station. On each of three additional class I–A channels, there are from three to six daytime-only stations besides the full-time 50,000-watt clear channel station.

Turning now to the 21 class I–B channels: On these channels, for the past 30 years, the Commission's rules have authorized the assignment of class II daytime or full-time stations on a secondary basis. But as in the case of the class I–A channels, applications for new class II stations on the class I–B channels, or to improve facilities of existing class II stations on the class I–B channels, have been frozen for the past 15 years (except for a recent lifting of the freeze with respect to a few of these channels), with the result that during this period

the number of such class II stations has been static at about 66 full-time stations and 71 daytime stations on these class I clear channels.

Here I would like to give you some further interesting information as to who owns the clear channel stations and the extent of their other interests.

National Broadcasting Co., a subsidiary of Radio Corp. of America, owns four clear channel stations located in New York, Chicago, San Francisco, and Philadelphia. In addition, it owns 11 other AM, FM, and TV stations in New York, Washington, Chicago, Philadelphia, San Francisco, Los Angeles, and Buffalo, as well as nationwide radio and television networks.

Westinghouse Broadcasting Co., a subsidiary of Westinghouse Electric Corp., owns 5 clear channel stations located in Boston, Pittsburgh, Cleveland, Fort Wayne, and Portland, Oreg., and 12 other AM, FM, and TV stations in Boston, Pittsburgh, Cleveland, Chicago, San Francisco, Portland, Oreg., and Springfield, Mass.

Crosley Broadcasting Co., a subsidiary of Avco Manufacturing Co., owns one clear channel station, located in Cincinnati, and five television stations in Cincinnati, Dayton, Columbus, Atlanta, and Indianapolis.

RKO Teleradio Pictures, a subsidiary of General Tire & Rubber Co., owns 1 clear channel station, located in New York, and 15 other AM, FM, and TV stations in New York, Boston, Los Angeles, San Francisco, Washington, Memphis, and West Palm Beach.

Storer Broadcasting Co. owns 1 clear channel station, located in Wheeling, W. Va., and 18 other AM, FM, and TV stations in Miami, Detroit, Toledo, Atlanta, Birmingham, Cleveland, Wheeling, Portland, and Los Angeles. Its station in Los Angeles (KPOP) is a daytime-only station on a class I–A clear channel, and was recently acquired by Storer from a former director of the Daytime Broadcasters Association who for 10 years had had pending an application to increase power which had been frozen during this entire period because of the clear channel freeze. Shortly after Storer acquired the station, the application, which was to increase power to 50,000 watts at a cost of $150,000, was taken out of the freeze by the Commission and granted without opinion or reasons, with two dissenting Commissioners—Ford and Lee—out of the five voting. Commissioner Ford was not then Chairman of the Commission, however. This was before he became Chairman.

The owners of the remaining clear channel stations include the Hearst Corp., the Tribune Co., Atlanta Newspapers, the Cowles newspaper interests, Travelers Insurance Co., Jefferson Standard Life Insurance Co., Washington Post Co., and the McClatchy newspaper interests, each of whom also owns other radio and TV stations.

In recapitulation of the allocation situation on the clear channels: Sixty channels, or almost 60 percent, of the standard broadcast band is assigned predominantly for clear channel wide area coverage with secondary use by limited coverage class II daytime only or full-time stations. 59 U.S. clear channel stations, about 1½ percent of all the U.S. stations, have the lion's share of the use of 45 such channels. Only 132 daytime stations and 66 full-time stations have been permitted the partial and very limited use of the 45 U.S. I–A channels, an average of 3 stations per channel. It is ironical that on the 15 foreign clear

channels the Commission has authorized about 500 U.S. stations, mostly daytime only, an average of 33 stations per channel. This, of course, has been due to the fact that the Commission has for 15 years frozen applications for class II stations on the U.S. clear channels but has continued to authorize new stations on the foreign clear channels.

Turning now to the remainder of the broadcast band, it will be apparent that the Commission's policy of refusing to make assignments of new stations on the 45 U.S. clear channels has driven applicants to the remaining 47 channels and to an intense overcrowding of such channels. The remaining channels are 41 class III (regional) channels, and 6 class IV, or local, channels. Approximately 750 full-time and 1,250 daytime-only stations have been assigned to the 41 regional channels, an average of about 50 stations per channel, and approximately 950 full-time stations have been assigned to the 6 local channels, an average of about 160 stations per channel. Regional and local stations are designed for relatively small area coverage and considerably greater degrees of interference to their operations are therefore permitted. Unlike the daytime stations on the clear channels, daytime stations on regional channels are authorized under Commission rules to begin operating every day throughout the year at 4 a.m., and this time is almost universally well before sunrise throughout the country just about at all times of the year. Anomalously, however, even though the same interference conditions exist in the corresponding hours after sunset, the Commission refuses to permit daytime stations on regional channels the same privilege of operating during such corresponding hours after sunset. Further on in my statement I will point up some other anomalies and inconsistencies.

In practical effect, the overcrowding of the regional and local channels, caused by the restrictive policies and freezes pertaining to the clear channels, has left nothing but daytime operations open for application in hundreds of communities throughout the country. Over 42 percent of the stations in the country are daytime-only stations. There are about 900 communities—in fact, almost a thousand—throughout the United States which have no full-time stations but only have one or more daytime stations. These stations must govern their operations not in accordance with the clock, but in accordance with the rising and setting of the sun, which varies in different months by as much as 5 hours; and in some months of the year in some areas of the country, sunrise occurs as late as 8:45 a.m., and sunset occurs as early as 3:45 p.m., making a total broadcast day of only 7½ hours.

The importance of daytime stations and of the problem before this committee is not to be found only in the fact that there are great numbers of such stations. Their importance is a product of the service which they render to the particular communities in which they are located—a service which can only be provided by local stations which are familiar with their own limited service areas and are closely attuned to their needs, and a service which cannot be provided by stations distantly located which necessarily are concerned with their own communities.

In brief, the services rendered by these stations cover the entire gamut of the business, agricultural, educational, political, religious, social and charitable needs, and interests of their local communities. These services include livestock and grain market reports, new farm-

61308—60——12

ing methods, county agent programs, agricultural features of local State colleges, road conditions, conservation work, field demonstrations, local weather and emergency storm news (including blizzards, floods, winds, and tornadoes), the effect of such conditions on schools and agricultural interests, aid to flooded areas, news of road hazards and driving conditions, local public features, local sporting events, and a host of others too numerous to mention. Representatives of individual daytime stations will present to your committee living examples of the kind of service which is required and rendered and the manner in which present restricted hours seriously hamper their ability to meet these needs.

The restriction of daytime stations to a fluctuating and irregular time schedule has severely limited the ability of these stations to serve their listeners adequately. Thus, because of early sunset and late sunrise during the winter months, services which are urgently required in the public interest are most drastically curtailed in the periods in which they are most frequently needed.

For example, a weather service geared to the local area and furnishing information concerning storm warnings and blizzard conditions is most essential during the winter months to the protection of agricultural interests, as well as to schools, parents, and schoolchildren, motorists and a host of other organizations and activities. In the fall, particularly in election campaign years, the shortened broadcast days deprive listeners in areas having only day-time stations of adequate opportunity to hear the candidates for local public offices. And on election night, in those areas, the public is denied news of local election results and must wait until the next day to obtain such results. In addition, there are serious operating difficulties in trying to operate on the basis of fluctuating and variable hours. A program which can be carried from 5:30 to 6 p.m. from April through August, may be forced off the air from September through March. During the height of the business season, such as the preholiday months of October, November, and December, when advertising time is in greatest demand, the station's time availabilities become most limited because of the short days. And serious burdens in staffing the station result from these fluctuating hours. For example, to avoid the problems of seasonal hirings and layoffs, daytime stations must keep on the payroll during the fall and winter seasons the same number of employees required in the seasons when their broadcast days are 4 or 5 hours longer. This is one of the problems which forces many daytime stations to operate on a schedule shorter than is permitted during the summer days—namely, in order to cut down the wide disparity in their permissible hours of operation as between the summer months and the winter months.

It has been obvious for many years that there is something fundamentally and radically wrong with a broadcast structure under which, at one extreme, 59 clear channel stations enjoy virtual exclusive full-time occupancy of more than 40 percent of the entire broadcast spectrum, and at the other extreme, 1,500 other stations must operate under restricted conditions hampering their efforts to serve the diverse needs and interests of their own communities.

Fifteen years ago, namely in February 1945, the Commission, recognizing the need for basic and fundamental revisions in the rules governing the allocation and use of the standard broadcast service,

instituted the clear channel proceeding. Two years later, in response to claims of the clear channel stations that they should be protected against further grants of daytime stations because of alleged daytime skywave interference, the Commission instituted a proceeding known as the daytime skywave proceeding. At the same time, the Commission imposed a freeze on all applications for new daytime stations or for improved facilities of existing daytime stations on the clear channels, purportedly until the daytime skywave proceeding was decided.

Both of these proceedings were concluded in January 1948 except for the issuance of the Commission's "final decision" which the Commission announced would be the next and final step. It was not until more than 6 years had gone by that the next step was taken and this was far from the final step.

It was because of this long period of inaction in the clear channel and daytime skywave proceedings, the freeze on daytime applications, and because there had developed in hundreds of communities throughout the country a critical public need for longer and for uniform service from daytime stations, that the Daytime Broadcasters Association was organized in early 1954. The necessity for a concerted effort to defend the interests of daytime broadcast stations became apparent in that year. In March 1954, the Commission issued a proposed report in the daytime skywave proceeding proposing to limit even more drastically the operating hours of daytime stations on clear channels. In addition to opposing these restrictions, DBA petitioned the Commission in 1954 to institute separate proceedings to determine whether daytime stations should be authorized to operate throughout the year on uniform and extended hours of operation on a minimum 5 a.m. to 7 p.m. schedule. This petition was supplemented by a further petition to the same effect in December 1955.

When over 2 years more had elapsed without any action on the DBA petition, and without further action in the clear channel and daytime skywave proceedings, the Senate Small Business Committee, in the spring of 1957, appointed a special subcommittee to look into this matter. That subcommittee held 2 days of hearings to inquire into these matters.

Our association as well as a number of individual stations participated in those hearings and presented extensive testimony and exhibits. The record of those hearings has been printed and I respectfully request that your committee incorporate that evidence into this proceeding. On September 11, 1957, the select committee issued a unanimous report which was severely critical of the Commission because of the longstanding freeze and the extensive delays in the resolution of the clear channel and daytime skywave proceedings, and because of the Commission's inaction with respect to the DBA petition. In its report the select committee reached the following conclusions:

(*a*) That DBA had raised a proper and legitimate question concerning the basic policy governing the allocation of radiofrequencies in the United States.

(*b*) That the need of local communities for satisfactory radio service merits a high priority in the allocation of the relatively small number of radiofrequencies available in the standard broadcast band.

(*c*) That the variable sign-on and signoff times of daytime stations had resulted in the inability of numerous local small businesses to

obtain advertising time on the radio stations serving their communities.

(*d*) That the Commission had taken a negative attitude in regard to the request of the daytime radio stations for extended and stabilized hours of operation.

(*e*) That the "freeze" was too broadly drawn and administered in a discriminating fashion.

(*f*) That the Commission had placed undue reliance upon engineering data and theories of radio-signal propagation and interference, and had given insufficient attention to the more practical question of actual radio-listener preference and practice.

(*g*) That there was a general tendency by regulatory agencies to favor the dominant members of the industry they are set up to supervise.

The committee made the following recommendations:

1. The * * * Commission should actively consider the petition of the daytime broadcasters and the clear channel and daytime skywave proceedings as expeditiously as possible. The Commission should devote a substantial portion of its time and its staff's time to the resolution of these longstanding matters.

2. The * * * Commission should not, in these particular proceedings and in all other matters involving the promulgation of rules of general applicability, regard them as "adversary proceedings" in which the decision of the Commission is to be governed solely by the strength of the cases presented by the competing interests. Rather, the Commission should utilize its own judgment, technical competence, and ingenuity, and that of its staff, in reaching decisions which are best calculated to promote the interests of the public.

3. The * * * Commission should either modify the "freeze," pending final determination in the matters here involved, or administer it in a manner which would permit the daytime radio stations to provide the maximum amount of service to their audiences consistent with the Commission's stated desire to retain "freedom of action" in disposing of the basic allocation problems pending before it.

4. The * * * Commission should secure data, either by use of its own staff and facilities or through contract with competent, established listener-survey companies, indicating the preferences and the listening habits of the people located in the so-called white areas.

5. The * * * Commission is requested to advise this committee by January 7, 1958, what, if any, progress has been made in the consideration of the clear channel and daytime skywave proceedings and the Daytime Broadcasters Association petition for extended hours of operation. In addition, this committee would like to receive status reports every 60 days thereafter until such time as the matters are finally determined or until the committee otherwise requests.

6. In the event the * * * Commission does not give evidence of its intention to pursue an active course in the consideration of these problems, or if decisions have not been rendered within a reasonable period of time, this committee will consider recommending to the appropriate committees of Congress that they consider legislation to dispose of the questions involved in the proceedings pending before the Commission.

7. The * * * Commission and the appropriate committees of Congress should reexamine the procedures used by the Commission in handling petitions for changes in Commission rules of general applicability, with a view to a more equitable distribution of effort among the various segments of the industry and with a view to expediting the Commission's consideration of such petitions.

On December 19, 1957, the Commission instituted rulemaking proceedings on DBA's request for uniform and extended hours of operation. DBA submitted extensive comments in this proceeding including voluminous data prepared by its consulting engineer. DBA's engineering comments were to the effect that the contentions made by the clear channel interests and others opposing the proposal for uniform extended hours were without adequate basis, that the claims of exten-

sive interference made by the opponents of the DBA proposal were based upon assumed conditions which prevailed 2 hours before sunrise and 2 hours after sunset, and that to permit daytime broadcasting stations an earlier starting time and a later closing time would not cause the serious interference which was assumed, since, by and large, the extended hours requested would occur during the periods when full interference conditions had not yet developed.

DBA's position on the so-called engineering or interference question has been that the Commission's restriction of daytime stations to the hours between sunrise and sunset has been based upon data and assumptions which are outmoded and which have never been tested by actual operation. It has been DBA's position that, as recommended by the Senate Small Business Committee, the matter should be decided by the Commission by obtaining information as to whether the stations which would allegedly be interfered with in areas distant from the location of such stations, were actually serving listeners in those areas.

It was pointed out that high power clear channel stations once served the useful purpose of rendering service to distant areas which might not, because of the economics of broadcasting, otherwise be able to support stations which were located closer to such areas, but that this was no longer true because of the tremendous growth of broadcasting stations throughout the country, and because of the greater public need and desire for local broadcast service in preference to service from distant stations.

The Commission was urged to decide the matter from the standpoint of whether people living in areas far removed from metropolitan centers actually listened to or desired to listen to the unsteady signals and programs of the distant clear channel stations, or whether they listened to or preferred to listen to stations in or near their own communities which would provide them with programing local to the area. DBA strongly urged that the Commission consider the conclusion of the Senate Small Business Committee that the Commission should not continue to place "undue reliance upon the engineering data and theories of radio-signal propagation and interference, * * *" or to continue to give "insufficient attention to the more practical question of actual radio-listener preference and practice," and the recommendation of that committee that the Commission should not regard these matters as "adversary proceedings" but that "the Commission should utilize its own judgment, technical competence, and ingenuity, and that of its staff, in reaching decisions which are best calculated to promote the interests of the public."

In view of the fallacies of the engineering and interference claims relied upon by the opponents of the DBA proposal, DBA in substance urged the Commission to look at the problem realistically from the standpoint of what the listener wanted and was entitled to have in the way of broadcasting service as recommended by the Senate select committee. However, the Commission, in a report issued on September 19, 1958, ignored this recommendation and denied the DBA proposal, relying almost solely on these questionable engineering and interference concepts.

This decision was a great disappointment to daytime broadcasting stations throughout the country. DBA, therefore, filed another petition urging the Commission to reconsider its decision, and if it felt

that it could not authorize the 5 a.m. to 7 p.m. proposal, that it authorize a shorter but uniform schedule of from 6 a.m. to 6 p.m. I would like to point out here that, during the hearings held in 1957 by the Senate Foreign Relations Committee with respect to ratification of NARBA and the Mexican agreement, Senator Fulbright himself had suggested to the Commission that it give consideration to a 6 a.m. to 6 p.m. schedule.

New hope was aroused in daytime broadcasters when, on January 12, 1959, the Commission issued a so-called notice of inquiry which called for written comments on the question of whether the Commission should institute rulemaking proceedings with respect to DBA's 6 a.m. to 6 p.m. proposal. However, when this notice of inquiry was studied, it was found that the Commission had created almost insuperable obstacles. It called for the most voluminous technical data imaginable, data which DBA could only have supplied if it had been equipped with a staff of scores of engineering and other professional experts, and with unlimited financial resources.

Our best estimates of the costs of getting together all the information called for were in the order of hundreds of thousands of dollars. This was a bill which daytime broadcast stations, most of which are small businesses with very limited means, were in no position to foot. For this reason and because, at best, only theoretical and impractical data would be obtainable from such an undertaking, DBA filed a pleading in which it urged that the only sound way to obtain the necessary reliable information indicating whether any serious interference would be caused would be to permit daytime stations to operate on an experimental or trial basis during the hours of 6 a.m. to 6 p.m. during the 1959 and 1960 winter seasons. In this way, the Commission could determine from actual operations what interference, if any, would be caused by such operations, what actual loss of service would result, if any, to listeners who during such period might be inclined to listen to the distant stations, and thereby to give the Commission the practical and realistic factual data upon which this question could be properly decided.

It was pointed out that since daytimers would not be making any additional investments for such experimental operations, they would not be getting a foot in the door in the event it was later found that regular operations on this schedule should not be permitted. In the accompanying comments prepared by DBA's consulting engineer, the feasibility of such a proposed test or experimental period, was corroborated. DBA's proposal for experimental or trial operations was, in fact, the most feasible way in which the conclusions and recommendations of the Senate Small Business Committee could be given effect. By this procedure, the Commission would be in a position to obtain all of the different types of information which would enable the Commission (in the words of the Senate Small Business Committee) to "utilize its own judgment, technical competence, and ingenuity, and that of its staff, * * *" in order to reach an eventual decision "best calculated to promote the interests of the public."

All our hopes were shattered, however, when the Commission in July of 1959 issued a report which concluded "* * * that there is no warrant for inaugurating rulemaking looking toward extended hours for daytime stations" and accordingly terminated that proceeding.

In doing so, it reiterated all of the stock reasons it had previously given which boiled down to acepting the engineering claims of the clear channel and loss of service would result from adoption of the proposal.

Before I go into the matter of the fallacies in the Commission's stated reasons for refusing to authorize a 6 a.m. to 6 p.m. schedule for daytime stations, I would like to give you the rest of the history of the clear channel and daytime skywave proceedings. As I have stated, when the Senate Select Committee on Small Business in late 1957 issued its report criticizing the Commission for its delays in deciding these proceedings and in continuing the freeze, these proceedings had been in a state of virtual dormancy for about 10 years, even thought the Commission had stated in late 1947 that all that remained was the issuance of a final decision. However, in November 1956, the Clear Channel Broadcasting Service petitioned the Commission to reopen the record in these proceedings and take further evidence. This was vigorously opopsed by DBA who urged that this would only result in more interminable delays, that the Commission should instead either dismiss those proceedings, since the past delays had plainly indicated the virtual impossibility of resolving these proceedings, and in any event that the Commission should terminate the freeze. In December 1957, when the Commission instituted rulemaking proceedings on the DBA 5 a.m. to 7 p.m. request, the Commision denied the DBA request to dismiss the clear channel and daytime skywave proceedings or terminate the freeze.

On February 10, 1958, in its annual report, the Senate Select Committee on Small Business, quoted from a "report on progress" rendered by the Commission to the effect that the Commission had held a number of intensive sessions during the past 90 days in an effort to resolve the clear channel and daytime skywave proceedings. The committee concluded with the statement:

> Although the many flurries of Commission interest in these proceedings in the past have died without any positive action being taken, your committee is encouraged that the FCC has taken seriously the most recent criticism and recommendations and that at long last a decision is imminent.
>
> In any event, your committee intends to continue its interest in the matter until the FCC meets its obligation to render a decision.

However, instead of a "decision," the Commission on April 15, 1958, acceded to the Clear Channel Broadcasting Service's request and declared that the record in the clear channel proceeding had now become "outdated" because of the long delays, and it started that proceeding on a new round of comments and evidencetaking by issuing a "Further Notice of Proposed Rulemaking." In this notice it proposed the assignment of full-time class II stations on 12 of the 24 class I–A channels and stated that it was leaving for later determination other issues involved in that proceeding.

The Commission announced in this notice that it would not terminate the freeze even if and when the proposed rule changes were adopted, and stated that the freeze would continue for some further unspecified future period beyond such time "until the pattern of the new fulltime assignments has become sufficiently crystallized" so that daytime assignments would not "unreasonably block opportunities" for the new full-time assignments.

On November 7, 1958, the Commission publicly stated that "it appears improbable that a final decision to amend the Commission's rules can be handed down in the instant (clear channel) rulemaking proceeding and implemented within a relatively short period of time." It went on to say that it was "impossible to predict at this time when a final decision resolving all of the questions in this proceeding can be adopted."

All comments in response to the Commission's "further notice" were filed by October 29, 1958, but 9 months later (July 21, 1959) the Commission publicly announced that it expected to issue "a document looking toward further rulemaking" in the clear channel proceeding. On September 22, 1959, after the passage of more than 5 years from the time of the issuance of its proposed report in the daytime skywave proceeding, the Commission issued its final report and final rules in that case. Simultaneously, however, in the clear channel proceeding, it embarked on still another new round of comments and evidencetaking by issuing a "third notice of proposed rulemaking" in which it put forth an entirely different, proposed solution of the issues in the clear channel proceeding. Although it resolved the daytime skywave proceding and issued rules concerning daytime skywave protection for clear channel stations, the Commission then changed the freeze so that, instead of terminating with the daytime skywave proceeding, it is now to continue until some indefinite future time after the clear channel proceeding is resolved.

The clear channel broadcast interests have successfully procured, over the opposition of DBA, and other daytime broadcast interests, 6 months longer than the Commission originally allowed for submitting the comments and evidence called for by the most recent notice of proposed rulemaking.

In April 1957, when I appeared before the Senate Subcommittee of the Select Committee on Small Business, in my testimony I reviewed the history of the clear channel and daytime skywave proceedings as of that time. I then stated:

> This is where the matter now stands. The history you have heard is one of years and years of stumbling, fumbling, and lethargy in dealing with a prolem of grave national importance. It is a history which forcefully shows how powerful interests representing a handful of stations in this country have been able, with their tremendous resources, to use every tactic not merely to perpetuate the status quo and preserve their entrenched favored position but to obtain additional privileges at the expense of needed service to the public in many parts of the country and to the great detriment of the small operators in this business. And we find ourselves today in a position where there is no reasonable likelihood that the long period of government inaction in this matter will end in the foreseeable future unless the Congress takes remedial steps.

The history of events since that time has confirmed and reinforced the conclusion that was then advanced to the Senate subcommittee and nothing that has transpired in the intervening 3 years has furnished any assurance that any remedial action can be expected from the Commission. As far as relief for daytime stations is concerned, the Commission has, however, spoken with finality—turning down flatly all of our requests. As I will now show you, its reasons for doing so cannot withstand scrutiny.

Time and time again, it has been demonstrated that the needs of hundreds of small communities throughout the United States for vital

public services that can be rendered by radio stations can only be met by local stations within these communities. In close to 1,000 communities, daytime only stations are the only local broadcast outlets. These stations stand ready, willing, and able to serve their communities and to meet their needs at every level—civic, social, educational, political, religious, agricultural, informational, economic, et cetera. The need for extended and uniform hours of operation by daytime stations has been recognized and conceded by the Commission and by the clear channel interests.

As I stated earlier, the Senate select committee admonished the Commission that it was the Commission's duty and responsibility to secure reliable data either by the use of its own staff and facilities or through contract with competent established listener survey companies, indicating the preferences and the listening habits of the people in the so-called white areas. The Commission, however, showed indifference to the explicit recommendation of the Senate committee. Instead of complying with that direction, it relied on mail-survey data which was furnished it by the clear channel interests.

However, the clear channel mail survey does not even purport to show audience listening habits at the times of the days or months involved in the proposal for extended hours operation of daytime-only stations: That data consisted of mail responses which were taken during the month of June, when there is of course no question of any interference whatsoever from daytime-only stations. The Commission also relied on a mail response tabulation of clear channel station WWVA in Wheeling, W. Va., owned by Storer Broadcasting Co. Here, too, there was no indication that the mail response indicated listening to WWVA during the hours around sunset and sunrise: On the contrary, it appears that these announcements were made during the nighttime hours when skywave is at its maximum.

It is self-evident that clear channel stations cannot and do not serve the people within their claimed gigantic service areas and it is equally obvious that even if such stations could in fact be heard thousands of miles away from their stations the people in such distant areas simply are not interested in what these stations have to offer. If instead of relying on mail surveys taken by the clear channel interests, the Commission had complied with the select committee's recommendations, this would have become quite apparent.

Obviously, the Daytime Broadcasters Association with its limited resources could not undertake the very expensive study which the Senate select committee urged. However, the latest available listener survey data for the entire United States is a study by the A. C. Nielsen Co., made in 1956. That company has a reputation in the radio and television industries for a high degree of accuracy in such service. It is similar to the Audit Bureau of Circulation (ABC) in the newspaper industry. It has been reported that the Federal Communications Commission purchased the A. C. Nielsen 1956 listener survey. It did not, however, put the results of that survey into the record of the proceedings on the daytimers' request, and it only made a casual reference to that survey in its decision turning us down. However, a number of daytime stations which subscribed to that survey have made available to DBA the report for clear channel stations in the States

of Illinois, Pennsylvania, and Missouri. The results of all of the data which is available to us is as follows:

[All 50 kilowatts]

Station	Frequency	City	Daytime circulation		Nighttime	
			Weekly	Daily	Weekly	Daily
	Kilocycles					
KDKA	1020	Pittsburgh	782,800	541,540	522,290	309,110
WCAU	1210	Philadelphia	514,200	349,170	315,130	185,310
KMOX	1120	St. Louis	575,580	375,660	319,640	175,640
WMAQ	670	Chicago	830,850	521,170	573,350	307,490
WGN	720	do	1,349,700	826,580	854,440	465,440
WBBM	780	do	1,128,280	742,630	626,440	356,010
WLS	890	do	773,090	479,400	496,410	231,500

You will note during the daytime KDKA has a daytime daily circulation of 541,540. You will notice this vast potential of covering half the United States, yet that audience is reduce to 309,110. The same thing is true to a degree, a greatly reduced nighttime audience of all seven of these stations. Remember these are 7 of the 25 class 1–A clear channel stations so apparently we are providing a service to people that they do not particularly care to use.

This data is most significant.

Mr. AVERY. Would you define "circulation" at that point?

Mr. LIVESAY. The A.C. Nielsen Co. sent out to homes throughout the United States a sampling, a questionnaire, asking the home, "To what station do you listen to monthly, weekly, daily, in the daytime and monthly, weekly, daily, at night?" This was so that they could find out what stations were reaching the homes in that particular area. Then when the questionnaires were mailed back, they were able to tabulate and find out what areas the various stations served best and to what extent.

Mr. AVERY. Thank you.

Mr. LIVESAY. This data is most significant and should finally put to rest any conceivable claim of the clear channel stations to "service" during the period involved in the request of daytime broadcasters for extended hours of operation.

It is overwhelmingly apparent that the program services of the giant clear channel stations which occupy almost one-fourth of the entire standard broadcast band are not only not vital but simply are not listened to. This data makes it perfectly clear that during the nighttime hours (when daytime stations are off the air and there is therefore much less competition to the clear channel stations) that clear channel stations nevertheless enjoy less acceptance and less listeners than they do during the daytime hours. When this data is measured against the claims off the clear channel stations to their "theoretical" nationwide coverage it becomes very clear that their claims of "service" are simply ludicrous.

The A.C. Nielsen survey of 1956 is proof positive that listeners prefer local listening. Let us study a typical county in downstate Illinois. Coles County has a population of 43,000 with two daytime-only radio stations serving them.

I happen to be a subscriber to the Nielsen Service. I had the data for Illinois. Coles County happens to be my county. Since we used

WLBH it might be better to use Coles County. (There are no full-time stations in the immediate area.) One of the daytime stations is WEIC in Charleston, Ill., the county seat of Coles County with 1,000 watts power on 1270 kilocycles, and the other daytime station is WLBH at Mattoon (20,000 population) with 250 watts power on 1170 kilocycle. Coles County is located midway between St. Louis and Indianapolis at a distance of about 120 miles and approximately 180 miles south of Chicago. The large 50-kilowatt clear channel stations out of Chicago reaches Coles County with approximately 2 millivolts of signal strength. (WLS, WGN, WBBM, WMAQ–KMOX reaches area with 1.4 millivolts from St. Louis.)

A little bit later I am going to present some information that will give you a better idea as to what millivolts means. It is a technical term of signal strength. Most stations in the United States, 0.5 millivolts is considered as a primary coverage area. You can see that the Chicago stations put in approximately 2 millivolts to the Coles County area.

You will notice from the following table taken from the 1956 data of the A.C. Nielsen study of listening habits that 90 percent of the people prefer local stations within the county. All five clear channel stations combined only rate a daily circulation of 55 percent. At night even when the local daytime stations are off the air entirely, these clear channel stations show a combined audience listenership of only 33 percent. This same example can be repeated throughout the United States.

Station	City	Net	Frequency (kilocycles)	Power	Daytime—daily listener percentage	Night—daily listener percentage
WLBH	Mattoon (local)	None	1170	250 watts	65	Off the air.
WEIC	Charleston (local)	None	1270	1 kilowatt	25	Do.
WLS	Chicago	ABC	890	50 kilowatts	18	14 percent.
WGN	do		720	do	13	6 percent.
KMOX	St. Louis	CBS	1120	do	10	11 percent.
WBBM	Chicago	CBS	670	do	6	None.
WMAQ	do	NBC	780	do	8	2 percent.
WCRA	Effingham		1090	250 watts	6	Off the air.
WPRS	Paris		1440	500 watts	2	Do.
WSOY	Decatur	CBS	1340	250 watts	6	1 percent.
WDZ	do		1050	1 kilowatt	2	Off the air.

Mr. AVERY. Daytime listener percentage of what?

Mr. LIVESAY. Percentage of homes, sir.

Mr. AVERY. Why wouldn't that add up to a hundred? How can you have 500 percent?

Mr. LIVESAY. You are looking at what, sir? People may listen to more than one station a day.

Maybe a listener says, "We listen to three stations daily, to Effingham every day, and we listen to Mattoon every day, and we tune in WLS, Chicago, every day."

Mr. AVERY. That is what I was hoping you were going to cover in my question a few moments ago when I asked you to define circulation. If a questionnaire is filled out indicating they listened to the following

stations every day or every week, if they listened to one of them 5 hours a day and a newscast 15 minutes a day, they would be just alike.

Mr. LIVESAY. Yes, sir.

Mr. AVERY. We cannot take the figures at their face value, can we?

Mr. LIVESAY. You must realize if they depend on that station daily, there is no way to know the quantity, whether they listen 6 hours or 2 hours or as you say, to a 15-minute program.

Mr. AVERY. We are in agreement. I wanted to make sure we were clear.

Mr. LIVESAY. This A. C. Nielsen data is about the only all-inclusive U.S. survey that is available at all to reach any conclusions.

The 1956 A. C. Nielsen survey data further proves conclusively that all stations have low percentages of listenership in that area beyond their 0.5 Mv/m. signal strength contour. Yet the FCC rules requires protection of clear channel class 1–A and 1–B stations during daytime out to their 0.1 Mv/m. contour. Furthermore, in the FCC denial of the DBA petition for longer and extended operating hours, populations were counted in this area between the clear channel stations 0.5 and 0.1 Mv/m. service contours. Little, if any, consideration was given by the FCC as to whether or not the people in these areas actually made use of such weak signals.

From the standpoint of local listenership, the A. C. Nielsen survey shows extensively heavy listening to the local area stations. In many instances the listening to the local station may run as high as 90 percent in the home, city, or county, and it is most common for the local listening to the local station to total 50 to 75 percent.

When all the smoke clears away, the Commission's refusal to extend the hours of operation of daytime stations is really based on the claim that the interference that would result from such operations would result in a net loss of service. Here, too, the Commission showed a disregard for the conclusion of the Senate committee "that the Commission had placed undue reliance upon engineering data and theories of radio signal propagation and interference." Even so, the hard cold fact is that even if its decision should turn on questions of engineering data and theories of radio signal propagation, the Commission was dead wrong and apparently was taken in by the inflated claims of the clear channel interests.

You will find from the presentation of our consulting engineer, to be filed with you tomorrow, that the Commission's engineering conclusions are based on many fallacies. I would, however, like to make some further observations concerning the claims of the clear channel groups which the Commission has apparently swallowed whole hog.

With respect to the claims of losses of service that would result, it is important to delineate precisely the areas that we are concerned with. First, let it be clear that we are not talking about nor could we be concerned with the 41 regional channels that you heard about this morning or the approximately 750 station that operate on those channels.

The Commission's rules for many years have granted a permissive right to all stations on regional channels to operate with their daytime power and facilities between the hours of 4 a.m. until local sunrise which in wintertime covers a period of about 3 hours.

This rule therefore, in effect, grants daytime stations on regional channels a license for extended hours of operation during the several

presunrise hours. There is, however, a hooker in the rule since it provides that the Commission upon the mere complaint of a full-time station on the channel, will summarily and without hearing terminate such an operation. However, operation by daytime stations during these extended hours has been going on for years—and the fact is that only in a very few instances have regional full-time stations been able to claim undue interference.

Any "interference" which would exist for 3 hours after local sunset cannot possibly be worse than that which exists from 4 a.m. to local sunrise. Obviously, years of experience with such presunrise operations by daytime stations on regional channels, with virtually no complaints over the past 10 or 15 years, shows, as a practical matter, that there would be no interference or other injury to those stations.

We are therefore dealing with the clear channels. First, it must be kept in mind that we are talking only about a very limited period of time—we are not talking about all night long or 365 days out of the year—since what is involved here is operation until 6 p.m., or at the most an hour and a half in the extreme northern latitudes, and this segment of time would be involved only on the shortest winter days of the year.

There is, however, a fundamental consideration which must be borne in mind in order to evaluate the claims of the clear channel interests. It is simply that the rules and technical standards of the Commission were formulated about 30 years ago in the very early period of the development of radio broadcasting. These basic standards were adopted with the objective of providing extensive service areas for high-powered clear channel stations with a high degree of protection from interference. The basic assumption in the formulation of these standards was that relatively few communities in the United States could afford their own local outlets and that service could only be brought to many areas in the Unted States and particularly to rural areas by the clear channel stations.

These basic assumptions for many years have been obsoleted by numerous far-reaching economic and technological changes. Nevertheless, the Commission has not only preserved and perpetuated these archaic standards which were adopted in the infancy of our industry but has elevated them to the status of "natural law."

Speaking of it being a natural law as referred to this morning, God did not draw the curves or God did not say 20 to 1 would be the ratio of an interfering signal to a desired signal. And, of course, to interpret what happens under natural laws is something that man has done, not the natural laws. The fact remains that as of this moment in history these standards bear about as much relationship to acceptable and listenable radio signals as the gramaphone of 30 years ago bears to present-day stereophonic recordings. The fact is that the "service" rendered by clear channel stations to distant locations is not service at all. This is so for a variety of reasons. Radio signals, or radio waves, consist of groundwaves and skywaves. The groundwaves which provide primary service are of a steady, consistent nature during the day as well as the night. Skywaves are a function of a phenomenon which occurs only at night. As the sun sets, a layer which the engineers refer to as the "ionosphere" builds up with increasing intensity during the night. The ionosphere consists of a

layer of electrified particles some 100 miles above the earth. The skywaves are reflected back from the ionosphere and as a consequence travel much greater distances than do the groundwaves. By their very nature these skywaves are intermittent, sporadic, and frequently unpredictable. They literally hop, skip, and jump—sometimes you hear them and sometimes you do not.

Equally important, however, these inherently unreliable signals are no longer acceptable, even when they can be heard, in view of the fact that they compete for listeners with thousands of local stations which provide consistent and uniform signals of higher intensities and which provide the program fare that meets the needs and interests of their own local communities. These considerations were virtually ignored by the Commission in its decision turning down the daytimers' request for uniform and extended hours.

In addition, however, the Commission completely ignored other significant factors which must be evaluated in arriving at any determination of the areas which clear channel stations in fact do serve as compared with the areas which they claim to serve. Because the signals of radio stations which operate during the nighttime hours are transmitted by both groundwaves and skywaves, interference is created by the station's own signal in the area where that signal is received by the two types of radio waves. At distances from 75 to 250 miles from the transmitter the station's signals are received by radio receivers from these two separate paths, groundwaves and skywaves. As a result, interference is caused by the station's own signals. This interference produces garbled transmissions and distortions of speech or music or other program content. In addition, the signals of the clear channel stations are subject to interference from the operation of other stations on adjacent channels. The Commission, however, completely ignored these facts and, in reliance on theoretical engineering curves, denied the request for extending the hours of daytime stations on the grounds that clear channel stations would sustain huge losses in their service area and that the daytime stations would render only minimal service during the extended period.

The error committed by the Commission can be shown by the simple test of actual listening. I have with me recordings of the signals of a daytime station—a half millivolt—and a clear channel station and I would like to play them for you so that you may determine for yourself the validity of the judgments made by the Commission.

We have referred to a half millivolt, a tenth millivolt, and they tune in a signal and it is either good enough to listen to or they turn off the set or tune in something else. We have a tenth-millivolt signal tuned in at random, so that you can evaluate the type of service that is being protected. [Recording played.]

You are about to hear the actual tape recording of a one-tenth millivolt broadcast signal on a frequency of 650 kilocycles. This one-tenth millivolt signal was received on the eastern outer edge of Mattoon, Ill., and is the signal of WSM clear channel station in Nashville, Tenn. WSM operates on a frequency of 650 kilocycles, with the power of 50,000 watts in all directions. They have a single vertical radiator tower. The signal strength was measured with an announced part model 120–D film strength meter, approved and properly calibrated. The reception was on a National NC–27 type receiver, com-

munications-type receiver, with an outdoor antenna and recorded on a professional Magnacorder recorder. Here is a one-tenth, sometimes referred to as a 100-microvolt, radiobroadcast signal, as received at the tenth-millivolt contour of WSM, Nashville, Tenn.

And now, then, let's listen to a half-millivolt signal, which is the normally protected primary contour of all except the class 1–A and 1–B clear channel stations in the broadcast spectrum. The nearest half millivolt to the 650 spot in the dial in the Mattoon area is KXOK, St. Louis, Mo., operating on 630 kilocycles, and now here is the signal, measured immediately after the WSM signal was recorded so that the approximate same noise condition exists and so that it is also approximately in the same spot on the dial; in other words, moved 20 kilocycles nearer.

Here is a half-millivolt signal of KXOK, St. Louis, Mo.

That gives you some idea that that was picked at random, noise conditions may vary more or less, and those signals were as close as we could get to a tenth and a half millivolt in that area for demonstration purposes. They were right on the button. They were made in the middle of the day. It is a daytime signal. You heard the announcer on WSM say it was 11 o'clock. I expect the people who are familiar with that announcer probably recognized him. It gives you some idea of how they count in turning down the proposal in saying 25 million people would lose service. Many millions of those 25 million would be losing that type service between those two contours.

A number of maps were prepared by the clear channel interests and were submitted by CCBS to the Commission. The Commission relied on these maps and based its findings on gains and losses of service on the data and showings furnished it by CCBS. I am submitting with my statement a number of these maps. You will note that these maps purport to show the service area of the clear channel stations as extending out to distances of a couple of hundred miles, or to the 0.1 millivolt per meter contour. You will note the contours are labeled. The outer one is the 0.1 millivolt per meter contour. That is the protected contour of that class station. You heard the recording of this class.

We will go down to the middle of page 31 now because we covered this other part on the recording. The Commission relied strongly in its findings, based on the data furnished it by CCBS, that because of interference which daytime broadcast stations would receive during the extended hours their gains in service would be negligible and therefore could not be justified. Let us take one example: radio station WCNT in Centralia, Ill., is a daytime-only station operating with 1 kilowatt power on the frequency of 1210 kilocycles. WCAU in Philadelphia is a clear channel station on the frequency of 1210 kilocycles and operates with 50 kilowatts of power. In its report and order turning down the daytimers' request the Commission stated that if WCNT in Centralia were to remain on the air during the extended hours its normal service to 189,825 persons would be reduced until they would serve only 20,684 people in March and 24,600 in December. The Commission's findings were based on the CCBS data which purported to show that the service area of WCNT would be limited to its 12.36 millivolts per meter signal strength contour, or a distance of approximately 7 or 8 miles from the station. The

recording which I am about to play was made at the time of WCNT's signoff or sunset in Centralia. The recording was made at the edge of Mattoon, Ill., a distance of about 75 miles from the WCNT transmitter. At the moment of sunset in Centralia it was then 1 hour past sunset at Philadelphia, the location of WCAU, the dominant class 1–A clear channel station on the same frequency. Look at your maps. The first map shows the allocation on 1210. The circles do not mean anything so far as distance of actual coverage. WCAU, 50,000 watts, 1–A, unlimited. We were outside of the half-millivolt protected contour of WCNT and without having to go to expensive time and travel to record it and assure you we can record similar instances throughout the United States, we picked this one at random to use as an example.

You will see on the next map marked "Exhibit 131" at the top, this was prepared by CCBS, or rather, prepared by WSM for CCBS, 6:15 central standard time, spring or fall, month of March, WCNT would render service to a very small limited area, that little white area in the middle marked 12.34 millivolts per meter.

Look at the little plus sign under Coles up at the right of the WCNT area and you will see the point where this next recording was made. Apparently if you could not hear it down, say within 20 or 30 miles of Centralia due to the activity of the skywave, it should have been worse at Mattoon.

Mr. AVERY. This is 6 o'clock?

Mr. LIVESAY. Signoff April 1. It was 7:45, right at sundown. They were staying on as long as they could.

(At this point a recording was played.)

Mr. LIVESAY. Did you hear the noise come up whenever this WCNT transmitter was turned off and this carrier station went off the air? When they stopped talking, the music stopped, that is the modulation cutoff. Then when the carrier was cut off, the carrier will suppress noise within your receiver. If it is stronger than the noise, that is. Whenever that carrier went off, the noise came up because there was no carrier there from 1210 kilocycles, WCAU in Philadelphia, to suppress that noise or to come in, nothing to hear.

This is a case where it has been dark an hour in Philadelphia, the home of WCAU. Compare, if you will, this WCNT signal you just heard, which curves have been used to deny the daytimers, compare, if you will, that signal, which they say is nonexistent and which, therefore, could not render service to people, with the signal of WSM which you heard a few minutes ago—and which the Commission has policed and protected for these past 30 years.

In all sincerity, I most respectfully state to the members of this committee that the Commission has been badly misled; that it has become enslaved by its graphs and charts which bear little or no relationship to the facts in the real world; and that as a consequence the public interest, convenience, and necessity has been affirmatively disserved. The radio spectrum is a national resource which belongs to all the people of the United States. As broadcasters we do not own the frequencies or channels on which we operate. The basic structure or classification of our standard AM broadcast service has had practically no revision for the past 20 years. The basic structure of the standard broadcast service has remained unchanged in the face of

tremendous and far-reaching changes in the other broadcast services and in the face of tremendous economic, technological, and sociological changes throughout the length and breadth of our land.

The Commission, however, has remained completely oblivious of these developments. Last year the Commission in its 25th anniversary report stated:

> The Commission also was unable to find any expression of local need which could not be substantially fulfilled under existing rules.

The Commission was finally made explicit what all of us should have understood over the course of the years. The Commission has affirmatively and clearly stated that it will do nothing.

We now appeal to you as the true representatives of the people of this country, as our only hope. I know how deeply and seriously you regard your responsibilities, and I know that you will approve these bills and once again make clear that the guiding principle in the field of broadcast communications is the public interest, convenience, and necessity.

I would like to also discuss the Commission charts which they used this morning, if I may, sir.

Gentlemen, you were presented this morning by a Commission representative this relative skywave signal strength chart. I would like to emphasize some points on this chart. That is, the fact that your figure here is 4,000. This is a relative chart, so apparently this is not particularly logarithmic. I beg your pardon, I understand it is.

This same chart drawn on what we call a linear basis will give the average person a little better picture of what actually happened. You will note here in the dead of night you have a condition existing that is considered as 4,000. In the day you have a condition of 10, which is 1/400 of 4,000. Three hours before sunrise the skywave signal strength begins to decrease. As it decreases, it is going to decrease in reliability. At 2 hours before sunrise it is at this point, at 1 hour is is here. Note that this 1-hour point will strike about the 2,000 point out here or less. Here is a thousand, 2,000, 3,000, 4,000. If you will notice this, which Mr. Cottone is handing out, this was basically resketched on a linear basis. It was equidistant from 10 to a thousand and up to 4,000. You will note by the time you get to this crossover point at sunrise you are down to 500, which is properly labeled here. But that is only one-eighth of the reliability of the skywave that existed at night near the midnight period.

When you draw the chart on a linear basis instead of a logarithmic basis, you get a more factual picture of what really exists. This is not almost as bad as it is at midnight, this is only one-eighth as reliable, only 500, which is one-eighth of 4,000.

I wish to point this out here because it could be that you might not have gotten that impression.

The remainder of the one-eighth of what it is at the noon hour period slopes off here at 1 hour, marked here, so that it would be down to 50 or 60 as compared to 4,000. Two hours would be way down here to a very low figure. Skywave is not reliable when it is that weak. You come off into the daytime and your buildup in the evening is the same way. Here is the crossover point at the exact moment of sunset, and you have only one-eighth of the full strength of skywave compared to what it is at midnight or later during the midnight hours.

Your linear chart at the bottom, this one reproduced on the top, gives you a very interesting comparison. They both mean practically the same.

What we are talking about, as shown by one of the charts this morning, is a very small part of the entire year. We will keep this handy, may want to refer to it again.

The CHAIRMAN. I think we will.

Mr. LIVESAY. You will note there is no problem compared to what we are doing now. Six a.m. does not come before sunrise, and 6 p.m. comes before sunset except in the months of October, November, December, January, and February at Mattoon, Ill. The sunrise period, 6 a.m., is after sunrise except in the months of November, December, January, and February. We are not talking about destroying all the nighttime service of all clear channel stations throughout the United States at all hours of the night. We are talking about a very small period of time here, at which they have not ever proved to the Federal Communications Commission or to any congressional committee that they have an appreciable audience during this particular period. Yet there is a crying need for local service in almost a thousand communities where they have no local full-time service.

Mr. AVERY. Is that not prime time on radio now?

Mr. LIVESAY. Early morning?

Mr. AVERY. 4:30 to 6 o'clock at night. Is that not considered class A time now on radio stations? It used to be class C time.

Mr. LIVESAY. Years ago they used to consider class A as from along in the evening, about 5 or 6 o'clock, throughout the evening, but with the advent of television and other interesting things, they have changed their classification considerably, and it varies so much now you could hardly make a general statement now as to what is class A time.

Mr. AVERY. Are not car radios taken into account now as a substantial impact on your listener audience, whereas, 10 years ago they were not a factor, and car radios are operating primarily between 4:30 and 6 o'clock; is that right?

Mr. LIVESAY. That is right. I was quite interested in the fact that you can tour across the country and about sunset you cannot get reliable service even with daytimers off. The skywave has not become reliable yet at sunset. It will be reliable later, but in most seasons of the year it is not reliable enough to give you enough signal to overcome the high line or the trucks alongside or your own motor noise or the noise of the wind. It is only one-eighth of what it is going to be later in the evening. That will go a long way to explain why you cannot get good service. The skywave will not provide it right at the hour of sunset. You have to tune to a close by station to get a good groundwave signal, whether from a clear channel groundwave or some other.

I was mighty glad that they used my particular station as an example this morning, because I have lived out there, was born in Illinois, lived there for many years. I have been in this radio business about 24 years, and I built this station in 1946. It is rather interesting that they are able to tell me here where I cannot be heard. You will notice here this is considered the daytime contour of WLBH in Mattoon, Ill., and that would be considered as the half-millivolt contour that we played for you on the recorder. This is Decatur, Ill., right here.

The CHAIRMAN. What do you mean by a half-millivolt contour? You have been talking about it. You tried to demonstrate it.

Mr. LIVESAY. Let us put it this way. As you go out from my transmitter, the signal gets weaker. By the time you get out to here, that signal is diminished to a half-millivolt, 0.5 millivolts.

The CHAIRMAN. What is it when it starts?

Mr. LIVESAY. At 1 mile it would be about 80 millivolts per meter. As you get farther away it gets weaker.

Mr. AVERY. Would you normally construe your market as that area within a 1-millivolt radius from your station?

Mr. LIVESAY. No, sir. The way the Commission has gone through with the allocation, they consider that this signal is usable and should be protected out to that 0.5-millivolt contour. If they go down the road a hundred miles and put in another station, they will engineer it so that it will not overlap with this contour so the people cannot hear it in that area. In other words, they go to a point of protection. We are protected to our half-millivolt, but if we were a class 1, a clear channel station——

The CHAIRMAN. Let us go back to what you described a while ago.

Mr. LIVESAY. It would be approximately 80 millivolts per meter.

Mr. AVERY. Eighty millivolts?

Mr. LIVESAY. That is right, sir.

The CHAIRMAN. What is a millivolt?

Mr. LIVESAY. A volt is an amount of electromotive force. In the standards they have come to the point of saying that if an electromagnetic field crosses a wire that is a meter long, it will create so much voltage in it. If that field is strong, it will create more voltage in this meter of wire. If it is weak, it will create less voltage. What a transmitter actually does is transmit out a wave into the atmosphere—ether, space—and the farther you go from it the weaker it gets. It is like throwing a pebble into a pool of water. The wave is big near the pebble, but look out a great distance in the smooth water, and you will see it diminishes as it goes from the center. The radio wave does the same thing.

They have to arrive at some value. In technical terms, we have to have something so that one engineer can say to another that is so much, and the other fellow understands what he means.

The CHAIRMAN. Do all stations start with the same strength when the signal leaves the transmitter?

Mr. LIVESAY. That will depend upon the amount of power that station has, whether it is a 250-watt station, 5,000, or 50,000 watts.

The CHAIRMAN. What is yours?

Mr. LIVESAY. Mine is a 250-watt station.

The CHAIRMAN. What is the strength of your energy when it leaves there?

Mr LIVESAY. At 1 mile, you have to get a point, the closer the stronger, we usually consider 1 mile, at 1 mile it is approximately 80 millivolts per meter.

The CHAIRMAN. You mean you cannot measure it until it gets out a mile?

Mr. LIVESAY. You can measure it, but it gets so close, it gets so strong, might get to a 10-volt or 50-volt field.

The CHAIRMAN. To further indicate my lack of familiarity with this, what are you using in terms of meters when you say——

Mr. LIVESAY. This stick is about a meter long. We have an instrument that has been calibrated and approved, which costs, new, $850, which is properly calibrated and it will tell us on a meter the field intensity, how strong the signal is, whether a half or a tenth or a hundredth millivolts. That goes back into your standards.

I gave you the fundamental of how they arrived at the basic theory behind a millivolt and why it is called millivolts per meter. Is that basically right, Mr. Brown?

Mr. BROWN. That is a little longer than a meter.

Mr. LIVESAY. A meter is 39.-something. A 250-watt station will have in the neighborhood of 80 to 90 millivolts, depending on the ground system, height of tower, et cetera. A thousand-watt station will have in the nature of 175 to 200 millivolts per meter at 1 mile because they start with more power from the transmitter. 50,000-watt station, like a clear-channel station, will have from 1,500 to 1,800 or 2,000 millivolts per meter at 1 mile. They start with more, so they have more when you get out 50 or a hundred miles, because it is dissipated with distance, absorbed in the earth, and other things. Does that answer your question basically, sir?

The CHAIRMAN. I will say this. It gives me a lesson in that particular field.

Mr. LIVESAY. Sir, you have my sympathy.

Let us take these maps here that they have so graciously drawn for us. This is considered by daytime condition, noon, midday. Two hours before sunset, the sun is still high in the heavens, 2 hours, it says my area, that half-millivolt area, has started to be reduced, has reduced considerably here by a distance of some 7 miles. Back here is the town of Effingham. Here Effingham is just within the half-millivolt and here just without it. One hour before sunset it has reduced at Arcola, just 15 miles north of Mattoon, they get intolerable interference, so our service there is no good 1 hour before sunset, according to these maps. Right at sunset the theory says our signal is reduced down until this looks like about 5 miles around my transmitter or 4 miles.

Gentlemen, I would like to invite you, and if you are too busy, send an emissary along with the representative of the Commission out to Illinois. We will not make him eat his hat because he would have to to eat it. This condition just does not exist because I am frequently in Efflngham at sunset, I am interested in it, I am turning it on, listening to see if this is true. I have never been able to remain on the air after sunset to find out if this is happening because the rule will not permit me.

However, I misinterpreted the rule in the early morning back in the early fifties, about 1951 or 1952, and that is a presunrise rule called 3.87. As I understood that rule, I could go on the air before sunrise and serve my people and as long as the dominant stations—in my case it was KVOO, Tulsa, and WWVA, Wheeling, W. Va.—so my little 250-watter here, according to the curves and theories, will interfere with these two stations, but under the presunrise rule, as I understood it, I could do it.

For four winters I did. I wrote a note to the transmitter engineer and said:

If you get notice from the FCC that we are causing intolerable interference to KVOO or WWVA, we will cease doing it. As I understand it, those stations will notify the Commission if we cause them undue interference.

For four winters I signed on the air at 6 a.m. Although the sun did not come up until 7 o'clock in December, I was on the air an hour before sunrise. I put it on my log. I thought it was right that I could do it legally. I did that four winters. My people enjoyed that service in our area. I know that the service area during that hour before sunrise was much, much larger than this period here, which is called an hour after sunset, because we experienced it, we know. Yet whenever somebody, I do not know who it was because you cannot always find this out, but someone informed the Commission that WLBH at Mattoon was signing on before local sunrise. They looked and found my channel was 1170 and who were the two dominant stations, and the way they interpreted that rule I could not do it. They wrote me a letter. I have a copy here. In January 1956 I received this letter from the FCC:

MATTOON BROADCASTING CO.
Mattoon, Ill.

GENTLEMEN: The Commission is in receipt of information to the effect that station WLBH is being operated at hours other than those specified in the station license.

You are requested to advise the Commission if station WLBH is being operated before local sunrise and if so, the authority for such operation.

Very truly yours,

MARY JANE MORRIS, *Secretary.*

Maybe if I had met Mr. Cottone before that, I would have found out this was not right and I should not have done it. I wrote back to the secretary of the Commission:

DEAR SECRETARY: This will acknowledge receipt of your letter relative to the signing on the air prior to local sunrise.

In September 1952, I learned that several of my neighboring stations on U.S. 1-B channels were going on the air prior to local sunrise during the winter months. I learned that they were doing this under the provisions of FCC presunrise rule 3.87.

I studied this rule (3.87) and my interpretation was that we could also operate prior to local sunrise unless we received notice from the FCC that we were causing interference to the dominant station or stations on the channel. In one instance the dominant stations on 1170 kilocycles are KVOO, Tulsa, and WWVA, Wheeling. According to the rule as I understood it, it was necessary for us to even notify the dominant stations or the FCC since 3.87 was a part of the FCC rules.

I applied for renewal of our WLBH license January 25, 1954, and again August 31, 1955, which included our program and transmitter logs of the composite week, being a part of the application. Logs of December 28, 1952; January 19, 1953; March 31, 1953; November 9, 1953; December 13, 1953; and February 2, 1954; all showed the hours of sign-on as being 5:45 a.m. and we received renewal of our license both times.

If the presunrise rule 3.87 has been changed, I was not aware of it nor have I been notified of any change.

If the operation of WLBH must now be curtailed to the extent of not being permitted to sign-on until 6:30 a.m. in November; 7 a.m. in December; 7:15 a.m. in January; 6:45 a.m in February, etc., it will be a terrible disservice to thousands of residents of east-central Illinois who depend upon our early morning news, weather, and market service programs in winter months during these early morning hours.

So far as I know, there have been no changes in the power or the directional antennas of the stations on 1170 kilocycles during the past 4 years. Surely our 250-watt signal for the past four winters has not interfered with the dominant stations on the channel or the FCC would have had interference complaints from them and would have ordered WLBH to sunrise sign-on long before now.

Please know that I am most anxious to comply with all FCC rules and regulations and if I have erred in my interpretation of the presunrise rule 3.87, or if there have been changes in this rule of which I am not aware, I will appreciate

getting straight in the matter so that our operation will comply fully with all rules and regulations, even though it may be a disservice to the people of our area whom we are faithfully trying to serve.

I got back a letter dated March 7, 1956, which reads:

GENTLEMEN: This has reference to your letter of February 15, 1956, in reply to a Commission letter of January 23, 1956.

Section 3.87(a)(2) of the Commission rules provides that the privilege of beginning operation prior to local sunrise will not be extended to any class II station causing interference, as determined by the standard broadcast technical standards by use of its daytime facilities, within the 0.5-millivolts-per-meter 50-percent skywave contour of any class I station except where an agreement has been reached with the class I station.

Station WWVA, Wheeling, W. Va., and KVOO, Tulsa, Okla., are designated as class I–B facilities and assigned to the frequency of 1170 kilocycles. Operation by station WLBH with its daytime facilities prior to local sunrise will cause interference as determined by the standard broadcast technical standards within the 1.5-millivolts-per-meter 50-percent skywave contour of these stations. Consequently, operation prior to local sunrise is not permitted, unless an agreement has been reached with stations WWVA and KVOO.

So I wrote to both those stations. They both said, no, that I could not sign-on before local sunrise. Furthermore, just the 1st of April this year I ran into Mr. George B. Storr, in Chicago. I talked to him about this matter. I said, "I would appreciate it very much if you let WLBH in Mattoon, Ill., sign-on before local sunrise, approximately an hour in December and January, 6 a.m." We discussed it a while. He said, "I will look into it and see if something cannot be done." I said, "Will it help if I write you a letter when you get back to Miami?" He said it would. I did that.

I wrote him a nice letter of a page or a page and a half, explaining the need of the service. He wrote back a nice letter explaining he had turned it over to the staff or to the engineers. A couple weks later I got a letter back saying he could not do it. It sems the Commission has turned over to these dominant interests as to whether or not I can serve people out there in the middle of Illinois. That was the situation which actually happened through an eror on my part, I regret to say. It actually happened, and this is one of the clear channel frequencies, 1170. I served four winters during the early morning, and it would be very similar to the situation at sunset. Yet I find here the map drawn up, accurately I am sure, by the standards, saying that our coverage an hour after sunset would be reduced to this and that is somewhat similar to what would be an hour before sunrise.

I know it was a great disservice to our area that we were denied the privilege of continuing to serve during the early morning with our AM facility. I am the only daytimer on this chanel, I believe.

Back in 1949, I spent around $15,000 and put in an FM facility. The question arose this morning. I thought I might touch on that. I put in an FM facility to try to extend our services into the evening period because FM has no interference problem. I took the channel asigned to the Mattoon area of 96.9 megacycles with effective radiated power of 23,000 watts, put it on the AM tower. We used the same studio facilities. We never made any money with it. There are several factors. We tried to develop it along the line of sports, used good music. It has been rough promoting it. It has helped tremendously. Our big problem——

Mr. AVERY. You say it has helped tremendously?

Mr. LIVESAY. Yes. We play sports on it in the wintertime, local high school basketball games. It is of help. Here is the basic problem. The automobiles have no FM sets. Radio today is wherever you go. You have one in your pocket, a transistor set, or one in the kitchen or in the bedroom. Usually maybe there will be one FM set in the house. Many homes do not have that. In our area it got very high at one time, as high as about 70 percent of the homes were reported to have FM. I doubt if that many have them. I do not know. People coming to work in our factories in the area and farm people getting out early in the morning have a radio in the barn while doing the chores. They do not rush out and buy a half dozen new radios so they can hear FM just a few hours in the winter months. They just raise the devil because for some reason this litle local station will not sign on until way up in the day and signs off early in the afternoon.

They do not understand all about these interference problems and rules and regulations. It creates a real problem for us to try to serve. You take the transistor radios. You see them everywhere you go. You cannot get a litle, tiny one that carries both AM and FM. About the lowest portable I have seen of any worth is around $189, made in this country by Zenith. There is one made in West Germany selling at retail for about a hundred dollars and maybe one in Japan for about $90 or $95. It is quite an expensive item for a portable set.

I think that is our basic problem. It costs me in various ways. It is hard to say that it costs you exactly so much to operate your FM because you have a lot of your staff working on both. In my case, I sign off my AM at sundown. This month that is 8:15 daylight saving time. My AM has to shut down at that time. I go on until about 10:45 with my FM. That is the signoff for FM the year around, but my AM keeps jumping back and forth. In December I sign off AM at 4:30 standard time; in June I can sign off at 8:15 daylight time. There is a big difference in the number of hours. People live by the clock, not particularly by the sun.

I still hope the Commission will send somebody out—I will entertain them, I will try to help them in every way I can. Excuse me, I will not entertain them. I want them to come out and see that this condition happens, that 1 hour or 2 hours before sunset it just does not happen.

The CHAIRMAN. Mr. Livesay, I happen to live in a fairly small community of about 25,000 to 30,000 population. There is a 250-watt full-time station. I do not know anything about the equipment, the transmitter and so forth, but in the daytime I know we can get that station on the car radio and otherwise 35 to 50 miles very well, depending on weather conditions.

I also know there have been innumerable times over the last several years that at night I cannot get it at Smackover, which is 10 miles from me. I use that as a nearby community. I know that situation exists in my experience in my own hometown. You cannot, after it gets night, after sundown, get that station very far out. I have never timed it to just see where you would get it at sundown or 30 minutes before sundown or 30 minutes after sundown. I have on innumerable occasions, particularly when they are having local football games, tried to get it coming in. It is just not there. Is that the same situation in your experience, except you have never yet been able to operate after sundown?

Mr. LIVESAY. That is a class IV channel, and there are about 160 stations on that same channel. The ability for you to receive that station out at Smackover will decline in accordance with this curve here. In other words, 2 or 3 hours after sunset, the skywave is at its maximum activity. If you want to see if this thing is really happening, you have to check along here and see if it is 1 hour after sunset or 30 minutes, or if it is at sunset that you can hear it 10 miles out. It is a transitional sort of thing we are talking about. The football game probably does not start until 8 o'clock at night, and that is in the fall of the year, and that is 2 or 2½ hours after the local sunset. So you have a lot of nighttime skywave activity that long after sunset.

Under these bills, the daytime stations will be off at 6 p.m. local time, and will not be interfering with anybody after 6 p.m.

The CHAIRMAN. Outside of the—I suppose I had better use the term "differences of opinion" which you have with the Commission, because I do not believe you intend to leave with this committee the impression that the Federal Communications Commission deliberately tried to mislead us this morning——

Mr. LIVESAY. No; I do not think they tried to mislead you. I do not think they tried to confuse you. Whether they did or not, I do not know. They have not confused me from the standpoint of interpretation of this curve, and the fact that this is one-eighth of the activity that you have here.

The CHAIRMAN. I am one of those who likes to give everybody due credit for what they honestly intend to try to do, which I give you, and just as I gave the Commission this morning, but from what you said earlier from that chart, when you called this other one to our attention, you could not say which you yourself tried to compare with this one. Is that right?

Mr. LIVESAY. That is right.

The CHAIRMAN. You have been in this thing so long and you are so firmly convinced that it is a fight between the clear channel people and the daytime broadcasters, you think the Commission knows of this difference which you have pointed out, and yet they come to us and give us this particular discussion on it this morning.

Mr. LIVESAY. I think the curves which have been adopted and are in our textbooks today in the colleges are not taken into the field and proven in the lab. The 20-to-1 interference signal ratio was established many years ago. There have been technical improvements, and perhaps that should be reappraised in recent months and years.

The CHAIRMAN. Perhaps so. You have seemed to stress in your 35 pages of testimony here that certain people in the broadcasting industry have an upper hand, and, because of that, they have been able to direct the thinking and the actions of the Commission. That is putting it rather sharply, but that seems to be the purport of your testimony here.

If that is true, I think this committee of the Congress should take a very careful look at this and give it a lot of consideration.

Finally, you did, however, as I am impressed with your testimony, admit that there is this problem of a natural phenomenon which starts about sundown.

Mr. LIVESAY. It starts before sundown.

The CHAIRMAN. Is that not true?

Mr. LIVESAY. It starts before sundown, but at the hour of sundown it has reached only one-eighth of its maximum.

The CHAIRMAN. I know, but it starts along that time of the day.

Mr. LIVESAY. To an infinitesimal point.

The CHAIRMAN. It starts at a certain time in the afternoon, the Commission said, and goes on for a certain time at night.

Mr. LIVESAY. That is right, sir.

The CHAIRMAN. You do have, then, that natural phenomenon which develops during the afternoon or evening.

Mr. LIVESAY. Yes, sir.

The CHAIRMAN. That is a fact, just as the Commission this morning said it was?

Mr. LIVESAY. That is right.

The CHAIRMAN. Then there is something to this business of a difference between the signals which are received when they are received by groundwave or by skywave.

Mr. LIVESAY. Yes, sir.

The CHAIRMAN. Then summing all this, as I observe from the Commission's testimony, the Commission is in full accord with this position. They have two engineers that I know of, maybe three, who are members of the Commission. I know Mr. Craven is an engineer, and I believe Mr. Hyde is. I am not sure about that. And Mr. Cross, I believe, is an engineer. And they have an engineering staff, some of whom have been with the Commission for many years, I suppose. They are all in accord with what the Commission has decided in connection with this problem.

It seems to me since we have disagreement between you and them, notwithstanding the charges you have made against the Commission in leaning toward the clear channel station operation, it is our duty to try to see whether or not the Commission is right in coming to a decision of a particular kind when this natural phenomenon begins to bring about the change. In other words, in these 4 months in the late afternoon and the 5 months in the early morning, whether or not that would make such a great difference insofar as the service is concerned to the American people. It seems to me the daytime broadcasters have probably conceded quite a lot when you give up your request for 4:30 to 7:30 or 5 to 7 whatever it was.

Mr. LIVESAY. Five to seven, yes, sir.

The CHAIRMAN. You did make a concession, trying to get some solution of the problem, and have brought it down to where there are only actually 2 months or 3 months where there is more than 1 hour's difference in what little interference there would be.

As I indicated this morning, it appears to me that, notwithstanding the reaction of the Commission, they would have authority to make tests at the appropriate time. I think the FCC Act gives the Commission the authority to authorize tests in connection with new types of broadcast. It appears to me that this would be in that category as a new kind of operation. I do not know.

Are there any questions? Mr. Younger.

Mr. YOUNGER. It seems to me that the difference of opinion exists from the standpoint that the daytime broadcasters say the interference is there anyway, that the interference which is claimed by these other stations is actually the interference between the groundwave and the skywave. Am I correct in gathering that from your testimony?

Mr. LIVESAY. You cannot make one broad statement and say that that always exists. This groundwave and skywave interference is a transient sort of thing. It comes in and goes out, in and out. It is usually prevalent in an area about 75 to 150 miles from the large station.

Mr. YOUNGER. But there is a conflict between the two waves from the same station so far as the receiving is concerned?

Mr. LIVESAY. That is right, sir.

Mr. YOUNGER. Possibly the interference which is detected might be that interference, and not the interference of the waves of another station.

Mr. LIVESAY. That is quite possible.

Mr. YOUNGER. It seems to me that there ought to be a better agreement among the engineers than exists here.

Mr. LIVESAY. Before I complete my testimony, I should like to add that on regional frequencies there are several hundred daytime stations which have been assigned therein the last 10 years, since the war when the influx of daytime stations became so great. You might wonder why there are so many daytime stations. Many of us could not get a full-time facility without going into expensive directional arrays. As was pointed out this morning, there were only 6 local channels assigned. Where the 250 watt full-time stations are located, some 950 local stations are operating on those 6 channels of the 107 channels. Some of the daytimers might have taken local channels if they had been available, but in many areas those 6 channels had already been taken. To have gone on a regional frequency quite possibly would have required several towers. When you get into several towers, you get into tremendous expense, plus the engineering cost of proving the pattern, and that sort of thing.

So the smaller communities, many of which have daytime stations, were precluded from going on full-time local channel. In order not to have anything at all, they took a daytime facility. The freeze existed on the clear channels, so they took regional channels for the daytime facilities.

On 950 kilocycles is the example of WSPA, Spartanburg, S.C. It was pointed out this morning there are several daytime stations on this frequency, also. On this chart you see several full-time and several daytime stations. The red ones are daytimers, the ones in black are the full-time. Already most of these daytime stations are operating before local sunrise. Under the presunrise rule of the Commission, they are permitted to go on the air as early as 4 a.m., if they so desire. Perhaps many of them do not go on that early, butmost of them go on by 6 o'clock, and many by 5:30, and use that portion of the period of time they feel the community needs in their programing. So we already have existing on 950 kilocycles a condition which is very similar to what we would have on regional channels if these five bills were approved. It would give from 6 to 6 the year round.

Mr. YOUNGER. It is possible to get an engineering committee separate from both the Commission and the daytime broadcasters to reach a decision which you would all accept and say that is it?

Mr. LIVESAY. It is quite possible that it could be done.

Mr. YOUNGER. The testimony is so far apart it is impossible for a layman to say which is right.

Mr. LIVESAY. Here is the thing which I really believe sums up some of our problem: The Commission places a lot of precedence on engineering rather than on public need for local service. Should they be subservient to engineering standards or public need?

Mr. YOUNGER. If there is interference and you cannot get a good signal, certainly the public is not being served. Is that not true?

Mr. LIVESAY. That is right, sir.

Mr. YOUNGER. You cannot serve the public unless you can give them a signal which will give them a program. You cannot serve the public by giving them a lot of noise. The program which you demonstrated—I do not know why anyone would turn on their radio to get that kind of program.

Mr. LIVESAY. I think that is right.

Mr. YOUNGER. It seems to me there ought to be some way of determining whether or not there is interference and whether or not this station does interfere after sundown or whether it is something else.

To my mind, it would be more valuable to the daytime stations if they had a definite time, even if it was from 7 to 5, so the people would know what hour it was on, than to have to look at the paper every month to see the time of sunrise and sunset. It may be you could agree upon some hours which would be definite. It may not be 6 to 6. It might be 5:30 to 5:30, or something like that. You would have a definite hour.

Mr. LIVESAY. Mr. Younger, they do average it out on a monthly basis. We change our sign-on and sign-off only once a month. Apparently this other would be more a compromise on a yearly basis.

Again, I want to point out this interference is so intolerable that on the regional stations which are not operating before sunrise, you would have an intolerable condition, but that has been going on now for 10 years or so, and seems to be very acceptable and working out in most cases very successfully. In fact, a man who owns a daytime station will testify. He has a daytimer on a regional frequency. He signs on every morning at 5:45 or 6, before sunrises in December and January. He might shed some light on how intolerable that interference really is to his service in his area.

Mr. YOUNGER. I am impressed with what you call the circulation, and your figures on that, but at the same time I am not sure that they give an accurate picture, because after sundown in the evening, probably more of them turn off the radio and turn on the television.

Mr. LIVESAY. Apparently that distant service is not as vital as it was back 25 years ago, when this policy of the Commission was first established. Eighty-five percent of the Nation today is covered with television. I believe that is the figure in the annual report.

Mr. YOUNGER. I think that would result in a tremendous change in radio.

That is all, Mr. Chairman.

The CHAIRMAN. Mr. Flynt, have you any questions?

Mr. FLYNT. Mr. Livesay, I scanned and I intend to read thoroughly every word in your statement. I have been interested in this problem for many years. The district which I have the honor to represent has a comparatively large number of daylight broadcasters and clear channel radio stations. I have tried to become reasonably familiar with this overall subject. I have had many personal conferences and tele-

phone conversations and exchanges of correspondence with one or more of the daytime broadcasters in the Fourth District of Georgia. I am very hopeful that at least some type of a test plan can be set up whereby those for whom you speak today will be given an opportunity to prove the contentions which you have so ably outlined.

My question is this: Are you not only willing but desirous of an opportunity for such a test to prove or at least attempt to prove your contentions?

Mr. LIVESAY. Yes, sir, we are. We proposed in our petition that the Commission permit a one- or two-winter test which would be cumulative and all daytimers would be on it. It is a cumulative problem and a cumulative result.

Mr. FLYNT. Am I correct in my assumption that you and the group for whom you speak would not want to be a party to disruption of broadcasting generally?

Mr. LIVESAY. That is why, sir, we said we will sign off at 6 p.m. and get off the air.

Mr. FLYNT. You want the benefit of a fair and impartial test to attempt to reconcile the differences of opinion which may exist.

Mr. LIVESAY. That is right, sir. We shall be very glad to make measurements of daytime stations and their actual service areas for that period up to 6 p.m. if they are permitted to remain on the air both summer and winter.

Mr. FLYNT. I want to take the opportunity to commend you and the group for which you speak for having voluntarily made the concessions which you made. I believe you amended your original petition. Is that correct?

Mr. LIVESAY. That is right, sir. We asked for 5 a.m. to 7 p.m., and we amended it to 6 a.m. to 6 p.m.

Mr. FLYNT. Again let me say I commend you for having voluntarily made that concession. I certainly hope that you will be given an opportunity on a widespread scale to operate at least during a test period, and then I am quite certain you will be pleased to abide by the results of that test. I express the hope that you will be given the opportunity for such a test.

Mr. LIVESAY. Thank you, sir.

The CHAIRMAN. Mr. Avery.

Mr. AVERY. My colleague from Georgia asked some of the questions I had in mind in regard to the test. I have just one or two more in that area.

Previous to that, I notice in the beginning of your statement, Mr. Livesay, you said the Daytime Broadcasters Association constitutes a cross section of more than 1,500 daytime stations. Actually, how many members belong to your association?

Mr. LIVESAY. In the neighborhood of 130-some-odd paying members to help finance the effort that we have put forth.

Mr. AVERY. How do you account for the lack of interest of the other 1,200?

Mr. LIVESAY. There are several reaosns for that. I think one of the predominant reasons is the fact that many daytimers are afraid to be a party to something that the Commission might not agree with.

Mr. AVERY. Do you think they are interested in extending their broadcastings, or are they satisfied with the way it is?

Mr. LIVESAY. I think most of them, the large majority of them, would be interested in extending their hours.

Mr. AVERY. If you are speaking for approximately 150 out of 1,500, members of the committee immediately wonder what is the position of the other 1,250.

Mr. LIVESAY. Many of the letters you have, Mr. Avery, are from stations which are not members of our association, daytimers which are just interested. Some years ago we wrote and asked a questionnaire something along the same line. I forgot the exact nature of the questionnaire. Many more than our membership were actually interested. We have had people who have contributed small amounts of money to our organization say, "Don't put me on the membership roll," because they do not want the FCC—they feel fear for some reason.

Mr. AVERY. I do not want to belabor that point.

There has been some talk about the compromise in shifting from 5 to 7 to the 6 to 6 provisions. Could you tell me, Mr. Livesay, if your association membership would be satisfied with that, or is this just a foot-in-the-door proposition to open it up so you can come back and get some more later?

Mr. LIVESAY. Sir, I am sure our membership would not consider this a foot in the door.

Mr. AVERY. I think the situation ought to be reappraised. You probably overheard my comments to the chairman here this morning. I think we have a considerably different situation than we had 25 years ago, and possibly different than we had 10 years ago. I think, too, there might be a difference geographically, where there is more or less a densely served local broadcasting service roughly east of the Mississippi as compared to the far reaches of the West where they have relatively few broadcasting stations and maybe need a stronger signal to reach remote areas. I think that probably should be explored.

With direct reference to Mr. Flynt's questions, you probably remember there was somewhat a difference of opinion between our chairman and either Commissioner Ford or Mr. Barr—I forget who was engaged in the colloquy at that time—as to what would constitute a fair test. I would like your opinion on that just briefly.

Could the Commission designate, our committee chairman asked this morning, an isolated area or a local area, as I believe he characterized it, and whoever was speaking for the Commission said no, that would not work; you would have to take one channel and explore all the possibilities, on the clear channel, the regional assignments, and local as well, before the conclusions of any test could be evaluated which is to be conducted. What is your opinion on that?

Mr. LIVESAY. We have discussed this at some length with our board of directors and Mr. Dillard. Because of the cumulative listenership to the daytime stations as well as others, if you take it only channel by channel, you would get only a few specific areas, like 1210, you would get only Saginaw, Mich.; Centralia, Ill.; and a place in Ohio, where those services get some interference. Maybe there is another daytimer down the road a piece serving another area. I believe you will have to do this on a wholesale basis for at least one winter.

Mr. AVERY. What do you mean by a "wholeale basis"?

M.r LIVESAY. Put all daytime stations on 6 to 6 and make the measurements during the months in question, 4 months in the winter.

Mr. AVERY. Do you think it would be feasible to test that many stations all at one time? How would they possibly make all of the measurements?

Mr. LIVESAY. You do it over a period of 4 or 5 months. During this period, engineers can be out making measurements. You must not only weigh the engineering, but you must conduct listener surveys to find out if they are using the service provided.

Mr. AVERY. I think we ought to clear this up.

The CHAIRMAN. Evidently you are not giving consideration to the other and I think more serious reason for their opposition to this, and that is our treaty responsibility with Canada, Mexico, and others. Could not the Commission select a region or an area in which it would not be bothered with any charge that we were violating our treaty obligations, until we saw how it worked out?

Mr. LIVESAY. You would have about 500 daytime stations on these 15 foreign clear channels. If you kept them signing on at sunrise and off at sunset, that would affect the overall picture some, but if you do it just by one clear channel, you will not get the cumulative effect. You have two factors in this. You have the listeners and the social side of it, and you have the technical side of it. As the Chairman of the Commission said this morning, one of the factors is the distribution of service in the various communities and States across the Nation. You have to weigh all these technical factors against the need of these community services. Some communities are denied this service except from sunrise to sunset, which changes every month. You cannot weigh this on technical considerations alone.

The CHAIRMAN. There are several channels within a given region, are there not?

Mr. LIVESAY. That is right, sir. You would need to do this on a wholesale basis to get a true picture of its economic effect and listenership results.

Mr. AVERY. It seems to me that would be an overwhelming undertaking. It would require a crew of a thousand engineers and surveyors to evaluate such a wholesale test. It would amount to a temporary organization. I do not know the answer to it, but I think we must narrow this down similar, perhaps, to the way the Commission wrote the rules for procedure of the test of pay TV. I realize whatever region is designated for test, if one is, it will meet with considerable opposition, because they would conclude that they were having economic sanctions directed against them, and in the favor of their competitors. So it is a difficult problem.

I cannot quite agree with you, Mr. Livesay, that it would have to be across the board, because you would bog down in your evaluations. I certainly agree with you that there are two aspects to this. Certainly the listener evaluation should come up in a position of higher priority than the technical aspects, because, after all, the technical aspects have been reckoned in such a way as to permit desirable listening on the part of the public. That is the criteria we have used.

Mr. LIVESAY. You are speaking of testing, sir. It is already being tested every morning on these regional frequencies; on channels like 950.

Mr. AVERY. You would expand that arrangement.

Mr. COTTONE. With your permission, Mr. Chairman, I may point out here that because of this Commission rule, 3.87, that permits as

many as 1,250 daytime-only stations to go on as early as 4 o'clock in the morning today under conditions of nighttime, and many of them of course do not go on until 5:30 or 6 o'clock, this situation prevails today under present Commission rules.

You have, to a large extent there already the test. This takes about 1,250 or some figure short of 1,250 and it is not a very great figure that is already operating under the conditions that the Commission says would prevail if the hours were extended until 6 p.m. in the evening.

You see, as I understand the engineering concepts here, the same interference conditions exist in the early morning hours as during the corresponding periods before sunrise as exist at the end of the day during the corresponding periods after sunset. You have those stations that by and large, and I do not believe the Commission has ever made a survey to see how many of those stations are today, 1,250 daytime stations are today presently operating during these so-called serious interference conditions because they go on automatically in the early morning hours and they do not go off in the early morning hours unless somebody complains of interference.

The Daytime Broadcasters Association did conduct a survey about 2 or 3 years ago on daytime stations, the daytime regional stations, to try to ascertain how many of those stations actually were operating in the early morning hours—bear in mind in many instances before 6 a.m.—and we found from those who answered the question that about 97 percent of those stations answered that they were already operating during these nighttime conditions. So you see you already have there the basis for information. If you assume what is said is accurate—and there is no reason to suppose it isn't because the same conditions prevail—then presumably there wouldn't be any more interference with those daytime stations on the regional channels operating on the other end of the day than today exists in the early morning hours.

I think that takes care of a very, very substantial block of the daytime stations. It is indicated in our report there are 1,250 daytime-only stations out of roughly 1,500 or 1,700 stations that are on these regional channels. So the problem is not as complicated as it might at first blush appear.

Mr. AVERY. What were the figures again?

Mr. COTTONE. There are 1,250 daytime only stations that are on these regional channels. There are 750 full-time stations on those regional channels. Unless they have been ordered off by some complaint, and from what we have been able to find out there are very, very few instances where they have been ordered off that early morning operation——

The CHAIRMAN. There are 400 how many?

Mr. COTTONE. These are approximate figures, Mr. Chairman. There are 1,250 daytime only stations that are on these 41 regional channels.

The CHAIRMAN. I thought you said "400."

Mr. COTTONE. 1,250.

The CHAIRMAN. 1,250 daytime?

Mr. COTTONE. Yes, sir.

Mr. AVERY. Out of the 1,700, or whatever that figure is. We have a conflict in that, 1,500 and 1,700.

The CHAIRMAN. 1,700 is more correct.

Mr. COTTONE. Yes. The reason for the difference is the fact that there are many of those daytime stations that are all under construction permits. They are in the process of constructing or have not yet constructed completely. That is where the difference arises between 1,500 and 1,700.

The CHAIRMAN. You say there are 1,250 daytime stations.

Mr. COTTONE. On the regional channels only.

The CHAIRMAN. Which means 39 channels.

Mr. COTTONE. Yes. The Commission stated 39 channels. We stated 41. The Commission's figures are probably more accurate. Let me say they are undoubtedly accurate.

Mr. AVERY. Then if I understand right all those daytime broadcasters on regional channels have the 4 a.m. permissive rule, if there is no objection filed for the broadcast by the other station?

Mr. COTTONE. Yes, sir.

The CHAIRMAN. Before he gets away from that point——

Mr. AVERY. Let me ask one more question: Of the 1,250 stations that are on that regional assignment, daytimers, how many would you estimate or do you know how many are broadcasting commencing at 4 o'clock in the morning?

Mr. COTTONE. The only way we have of determining that is this poll we conducted about 2 years ago. We asked the daytime broadcasters who are on these regional channels to respond as to whether they were operating in accordance with this presunrise privilege. I do not have the figures at the moment but my recollection of the figures is that of—I forget; we did not get a return from every one of them, of course, but as I recall the percentage was something in the area of 95 or 97 percent of the daytime broadcasters who answered the questionnaire. Now, I might point this out also——

Mr. AVERY. What did they say?

Mr. COTTONE. That they were operating in the early morning hours.

Now, I would add this: That we found a certain reluctance among the daytime broadcasters in answering this because for some strange reason they have a fear that if this is known that somebody will file an objection and force them off this early morning operation.

We encountered that. We have encountered that quite frequently. The fact of the matter is as we have talked to the daytime broadcasters, I have rarely found a daytime broadcaster on a regional channel who was not operating in this early morning period.

As I say, this is the identical situation that prevails at the other end of the day.

Mr. AVERY. You mean the atmospheric condition?

Mr. COTTONE. That is right.

Mr. AVERY. The desirability of the time is completely different?

Mr. COTTONE. As a commercial matter; yes.

Mr. AVERY. What other way is there to value it?

Mr. COTTONE. There is also this point about that rule: That that same rule permits the full-time stations to operate, not with those directional patterns that we saw in this chart, but in accordance with the daytime pattern. They have the same privilege as the daytime station has, to operate with their daytime facilities. They do not have to go on this directional operation in that early morning period.

Mr. AVERY. Then there are only 450 daytimers that are on local channels, approximately.

Mr. COTTONE. No.

Mr. AVERY. Where are they, then?

Mr. COTTONE. The only other place for the daytimers is on the clear channels, because on the local channels, those are full time. Those are very small stations. They are all full time. There are only six of those channels.

Mr. AVERY. I hope I did not lead the colloquy too far away, Mr. Chairman, for you to recapture it.

The CHAIRMAN. On the 6 channels assigned for local stations, there are approximately 1,000 stations; is that right?

Mr. COTTONE. Yes. The figures we have down are 950. I think a thousand is a good round number.

The CHAIRMAN. Those are not necessarily daytime stations.

Mr. COTTONE. None of them are daytime stations. They are permitted to operate full time on those six channels. The station that you referred to in Eldorado is on one of these local channels.

In that particular instance I think there are about 250 others, other local stations on that channel. About 200 or 225.

The CHAIRMAN. They gave this morning an average of 150 to 200 on each of the 6 channels.

Mr. COTTONE. Yes. That is an average.

The CHAIRMAN. On the 39 channels——

Mr. COTTONE. Regional channels.

The CHAIRMAN. Regional channels, there are how many daytime stations?

Mr. COTTONE. About 1,250.

The CHAIRMAN. And how many full-time stations?

Mr. COTTONE. About 750.

Mr. LIVESAY. There are more than that. There are about 900. I believe the Commissioner said 900.

The CHAIRMAN. He said 790 this morning.

Mr. COTTONE. These were figures that we started out with, figures we prepared for the hearings before the Senate select committee. We tried to round them out in accordance with the general trend of increase. We don't claim that these are exact figures, but they are merely approximate figures. Relatively they are right.

The CHAIRMAN. You said there are 1,200 daytime stations operating on the 39 channels allocated for regional purposes. They can come on the air at 4 o'clock in the morning?

Mr. COTTONE. As early as 4 o'clock in the morning.

Mr. LIVESAY. As early as. Some don't want to come on that early.

The CHAIRMAN. They have to get up too early.

Mr. COTTONE. Yes. Most of them come on at around 5:30 or 6 o'clock. By 6 o'clock I think you will find they have come on.

The CHAIRMAN. What is the contention that these stations can come on without interference? How many stations do you say you represent; 1,500?

Mr. COTTONE. No. The Daytime Broadcasters Association does not comprise that many members.

The CHAIRMAN. You say, "The membership of this association constitutes a cross section of more than 1,500 daytime stations."

Mr. COTTONE. What we intended by that is the membership of the Daytime Broadcasters Association covers daytime broadcasters on

every class of channel—the foreign clear channels, the regional channels, and the U.S. clear channels.

The CHAIRMAN. How many daytime stations, then, are not authorized to come on in the morning?

Mr. COTTONE. The difference between 1,250 and the figure of 1,500.

Mr. LIVESAY. Between 1,600 and 1,700.

The Commission figure about a year and half ago was 1,500 and some.

Mr. COTTONE. Roughly 500. Something less than 500.

The CHAIRMAN. Do you know why these 500 could not be authorized to come on in the morning before 6 o'clock as the 1,250?

Mr. COTTONE. I do not know the origin of the rule exactly. Perhaps the Commission can explain it. But bear this in mind: That if the dominant station consents, even on these clear channels, putting aside the foreign clear channels because that is quite a different thing; there are 15 foreign clear channels. Putting aside those——

The CHAIRMAN. How many are on those daytime stations?

Mr. COTTONE. There are about 335, I believe, or so daytime stations on the foreign clear channels.

The CHAIRMAN. 335. We will get this thing down to where you won't have many left.

Mr. COTTONE. Because of the freeze on the clear channels, there are a relatively few daytime stations on the U.S. clear channels. We gave you the figures here.

On page 6 of our statement, "There are 132 daytime stations on UTS 1–A channels." I beg your pardon. There are 132 daytime stations on the 45 clear channels. That is 1–A and 1–B, only 132.

The CHAIRMAN. What do you mean, 45 clear channels?

Mr. COTTONE. There are 45 of the channels that are clear channels.

The CHAIRMAN. I thought you said this morning 25.

Mr. COTTONE. Those are 1–A channels. That includes the 1–B. The figure I gave you includes the 1–B channels. Let me clarify that. There are 25 1–A channels and then there are another 22, I believe it is, or 21, 1–B channels. Those are all clear channels, U.S. clear channels.

The CHAIRMAN. They told us there are 25 clear channel stations this morning and that they had assignment of one station to that channel and no other assignment throughout the country.

Mr. COTTONE. At night. There is no other assignment.

The CHAIRMAN. What about these 21 1–B channels?

Mr. COTTONE. The 21 1–B channels permit nighttime operation under very restricted conditions.

The CHAIRMAN. Permit nighttime operation?

Mr. COTTONE. Of other stations.

Generally, on the 1–B channels there are 2 class 1–B clear channel stations, as distinct from the 25 1–A, on which there is only 1 clear channel station. The difference between the 1–A and the 1–B, in addition to the fact that you have two clear channel stations on the 1–B, is the fact that nighttime operation by other stations is permitted on the 1–B channel under certain restricted conditions which protects large service areas.

The CHAIRMAN. Then this problem which you are dealing with today insofar as the morning is concerned, is only approximately 500 stations involved?

Mr. COTTONE. That is right.

The CHAIRMAN. Just a little under 500, according to your testimony.

Mr. COTTONE. That is right.

The CHAIRMAN. Of that 500, 335 of them are on the foreign end of it.

Mr. COTTONE. That is right.

The CHAIRMAN. That leaves only about 150, or something like that, others.

Mr. COTTONE. That is right.

Mr. LIVESAY. All will be affected in the evening.

The CHAIRMAN. I know. I am talking about the morning now.

In the evening, in addition to these, the 1,250 referred to on the regional channels, the daytime stations would be affected.

Mr. LIVESAY. No daytime now stay on after sunset.

The CHAIRMAN. Well, during some parts of the year?

Mr. LIVESAY. All parts of the year.

The CHAIRMAN. Pardon?

Mr. LIVESAY. At sunset all daytime stations except a very few limited time, they have to sign off at sunset.

The CHAIRMAN. These 1,250 you referred to have to sign off at sunset; do they not?

Mr. COTTONE. That is right.

Mr. LIVESAY. They, plus the foreign clear plus the U.S. clear.

The CHAIRMAN. In other words, all daytimers have to go off.

Mr. LIVESAY. That is right. Most of them at their local sunset. There are very few exceptions.

The CHAIRMAN. It does still seem to me that if we could take these 150 and have a trial test on them, we could really find out from actual operation what the experience would be.

Would your organization consider such a test, without fussing about the rest of it?

Mr. LIVESAY. Right off I cannot say just what the effect would be, or the results that you would find from that because you have 15 other channels, daytimers——

The CHAIRMAN. What?

Mr. LIVESAY. You have 15 of these foreign clear channels where the daytime channels would not be permitted to get on the air before sunrise and they could not stay on after sunset so you would have 375 communities, or however many there are in that category, those communities that would be denied local service and I do not know whether you would have your cumulative effect or not. You would get your technical effect probably but not your cumulative effect.

The CHAIRMAN. If you cannot get a cumulative effect with 365 stations, what do you think it would take to get it? Are you in the position like the so-called advocates of pay TV? You just want to blanket the whole thing in at once and adopt it as a principle? That is what you would like to do, but I am trying to discuss with you some reasonable approach to try to, by actual operation, see who is right.

Mr. LIVESAY. Can you shed any light on the technical feasibility of this sort of test?

Mr. COTTONE. It probably could be approached. I imagine this would require a little bit of study, Mr. Chairman, in all fairness, but it seems to me that the least harmful effect that could be expected would be to try it with the regionals, as at least one of the categories after sunset because we know at least those regionals that we know are operating presunrise, we know the conditions are identical with the conditions—we must assume the conditions are identical in the postsunset hours as they are in the presunrise hours when they are already operating, so that if you want to start out to be sure that you have got some kind of a safety factor here, it would seem logical, at least as one necessary ingredient, to see how this works with these very same stations that are operating during the morning during these hours. The Commission has recognized that that type situation is not one that they need to be so concerned about because they have left it to decide if and when there is any complaint of interference so it would seem that there is at least a starting point.

The CHAIRMAN. Why couldn't you try it with the regional and the 165 that are not original, or whatever the number is?

Mr. COTTONE. I would certainly, or my own reaction to that is that most certainly should give a most substantial amount of very vital information.

The CHAIRMAN. Of course, if what you say is true, the ones that own the clear channel stations for full-time operation might prevail upon those who are operating daytime clear channels not to operate beyond 6 o'clock, if they had that much power or influence over them.

Mr. COTTONE. There could very well be many daytimers in their own communities—and we have recognized and we have not urged that every daytimer must be permitted or must operate until these hours, but merely that the authority should be permissive—there may be many areas in many communities where it is just not suitable to operate until 6 p.m. so that you do not know right at the moment whether every daytime would take advantage of this privilege.

The CHAIRMAN. Now you are saying that you just want authority to operate according to the convenience of the station management itself.

Mr. COTTONE. No.

The CHAIRMAN. I thought you came here in the public interest, that you were interested in the public.

Mr. COTTONE. If you are concerned about the severity or interference that might be caused by numbers, this might be a factor that may not make it as difficult as might otherwise be the case.

Let me say, in regard to foreign clear channels, I recognize as a lawyer that the Commission would have a problem in authorizing the daytime stations to operate at hours outside of the sunrise and sunset hours. That, it seems to me, would have to be accommodated, even for these purposes. It might have to be determined on the basis of some possible negotiations with foreign countries. I cannot conceive of doing it without some kind of amicable effort in relation to our neighbors in foreign countries, to get their cooperation for this sort of thing.

You do have a problem on that, and in fairness to the Commission it must be stated that there would be a problem about the authorization of these experimental operations on the foreign clear channels. That would have to depend upon some negotiation, perhaps.

The CHAIRMAN. We have gone pretty late this evening.

Mr. AVERY. May I ask just one question?

The CHAIRMAN. Mr. Avery.

Mr. AVERY. Mr. Cottone, I should have directed this to the Commission this morning, but I do not believe this question has been asked yet. Is this sunrise-to-sunset rule an international one? Does it have an international connotation among broadcasters all over the world?

Mr. COTTONE. Yes, sir.

Mr. AVERY. It has a specific connotation as far as broadcast regulations are concerned?

Mr. COTTONE. As far as broadcast regulations are concerned, as far as the rights of each nation who hasn't been given privileges on clear channels. As far as regionals are concerned, I do not think there is any problem. Otherwise, we would not have this Commission rule which permits the early morning operation on the regional channels.

Mr. AVERY. Thank you very much.

The CHAIRMAN. Off the record.

(Discussion held off the record.)

The CHAIRMAN. I think we have laid pretty well the groundwork for these hearings. We have the issues pretty well in the record. I assume that Mr. Dillard's presentation will be technical and with engineering data.

Mr. Dillard, you will be the first witness tomorrow afternoon at 2 o'clock when we resume the hearings.

The committee has an executive session in the morning; therefore, we cannot hear you in the morning. That is the reason we tried to make up for it, morning and afternoon today.

The committee will adjourn these hearings until 2 o'clock tomorrow afternoon.

(Whereupon, at 4:55 p.m., the committee adjourned to reconvene at 2 p.m., Tuesday, June 14, 1960.)

DAYTIME BROADCAST STATIONS

TUESDAY, JUNE 14, 1960

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND POWER
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to recess, in room 1334 of the New House Office Building, Hon. Oren Harris (chairman) presiding.

The CHAIRMAN. The subcommittee will come to order.

Yesterday, during the testimony of Mr. Livesay, he referred to a statement that he had to go along with a chart, which was not included in the record. And I think, Mr. Livesay, it is this chart here.

I think, Mr. Livesay, you wanted to make some correction or change in the statement. Is that true?

Mr. LIVESAY. Yes, sir.

The CHAIRMAN. For the record, I think you had better state what it was.

Mr. LIVESAY. For the record, in the first paragraph of the statement that went with these charts, it is referring to the testimony given in January of 1960 before the Senate Foreign Relations Subcommittee, that there may have been conveyed a distortion of these facts. And I would like to strike that and say that it requires further explanation. And strike the "distortion of facts," because it might be misinterpreted.

The CHAIRMAN. You wanted to strike the words "certain distortions of fact may have been conveyed in the"——

Mr. LIVESAY. That is right.

The CHAIRMAN. And in lieu of that insert "there should be further".

Mr. LIVESAY. That is right, sir.

The CHAIRMAN. With the modification, let it be included in the record, and also the chart that goes with it.

Mr. LIVESAY. Thank you.

(The modification and the chart referred to follow:)

RELATIVE SKYWAVE SIGNAL STRENGTH

After studying the testimony of the representative of your FCC before the subcommittee of the Senate Foreign Relations Committee in January 1960, it is evident that there should be further explanation of the FCC graph showing of "Relative Skywave Signal Strength."

This same FCC graph redrawn on a linear basis conveys much more accurately the reduction of skywave activity during the early morning sunrise period and the buildup of skywave activity during the sunset period in the early evening.

It is obvious that the strength of skywave service starts declining some 3 hours before sunrise and at 1 hour before sunrise the reliability of skywave service has reduced 50 percent. By the time of exact sunrise, the skywave serv-

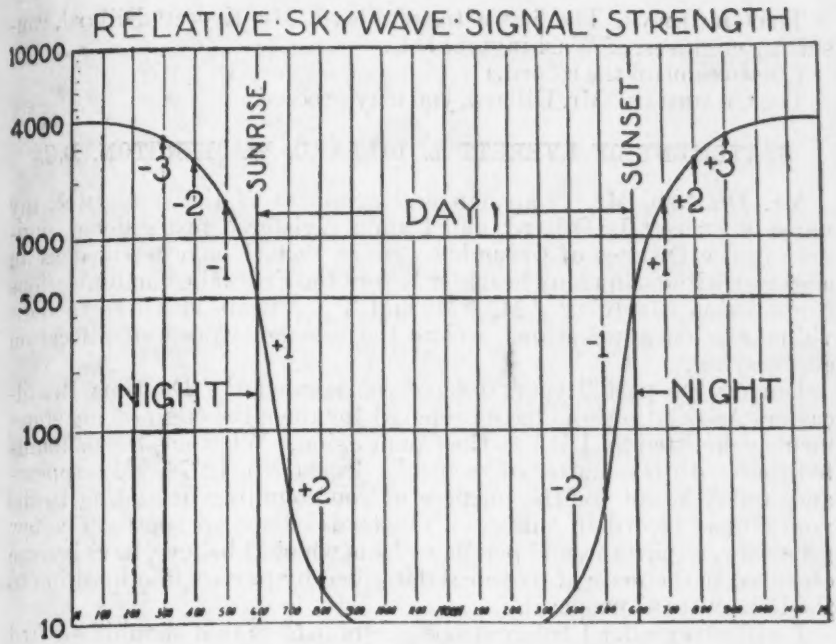
ice is reduced to one-eighth, or to just 12.5 percent of its full nighttime serviceability.

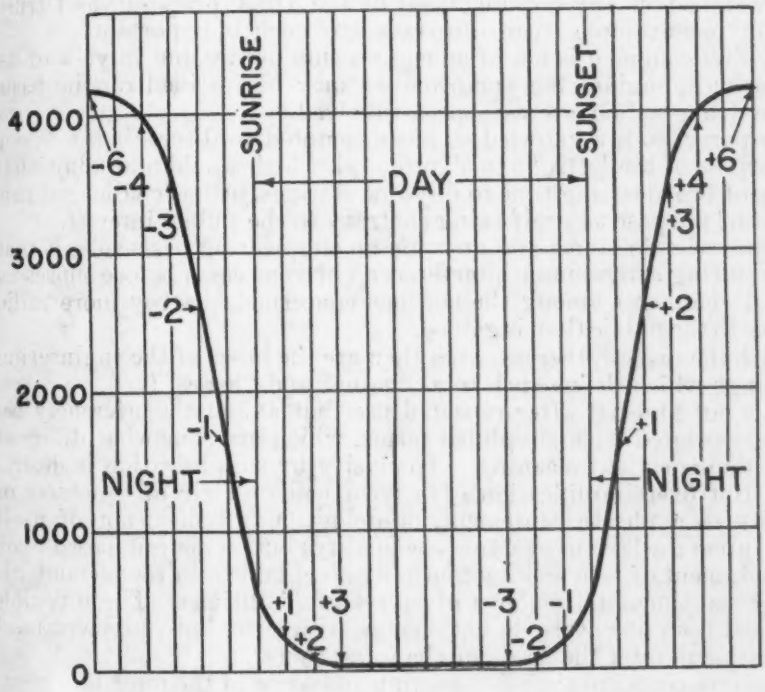
The buildup of skywave signal strength in the evening follows a similar pattern in reverse to the morning reduction. It will be noted that at the moment of sunset the reliability of skywave signal strength is only one-eighth, or 12.5 percent of its full nighttime reliability. It will also be noted that the full serviceability of nighttime skywave signal strength is not reached until more than 3 hours after sunset.

For many years it has been the practice of the FCC to not accept nighttime signal strength measurements unless made later than the second hour after sunset.

In 1959 the FCC adopted much more restrictive engineering standards *In the Matter of the Daytime Skywave*, docket 8333. The FCC had originally considered in 1954 to invoke this more restrictive operation on existing daytime stations, but finally adopted it to apply to future daytime grants and to any existing daytime station that applies for increased power.

It is hoped that the illustration on the opposite chart gives a comparison whereby all can readily understand the FCC presentation of the relative skywave signal strength, so that in your consideration and deliberation you will have this matter of skywave service in its proper perspective.


RELATIVE·SKYWAVE·SIGNAL·STRENGTH
10000
4000
1000
500
100
10
SUNRISE
SUNSET
DAY
NIGHT
NIGHT
-3
-2
-1
+1
+2
-1
-2
+1
+2
+3


4000
3000
2000
1000
0
SUNRISE
SUNSET
DAY
NIGHT
NIGHT
-6
-4
-3
-2
-1
+1
+3
+2
-3
-1
-2
+1
+2
+3
+4
+6

The CHAIRMAN. The first witness today is Mr. Everett Dillard, consulting engineer, of Washington, D.C.

(Discussion off the record.)

The CHAIRMAN. Mr. Dillard, you may proceed.

STATEMENT OF EVERETT L. DILLARD, WASHINGTON, D.C.

Mr. DILLARD. Mr. Chairman and members of the committee, my name is Everett L. Dillard, and I am a registered professional engineer in the District of Columbia. Since 1936, I have testified as an engineer witness in many hearings before the Federal Communications Commission involving AM, FM, and TV stations, both as to individual station applications, and to the broader aspects of allocation engineering.

During the past 2 years I have represented the Daytime Broadcasters Association, and have prepared for them the engineering statements submitted by DBA to the Commission. What has been submitted therewith is a matter of record in docket No. 12274. My appearance today is not for the purpose of compounding or adding to the voluminous record in this case. Instead I hope to spotlight a few necessary, important, and pertinent facts which, I believe, have become obscured in the mass of technical data filed by parties in opposition to the DBA "6 to 6" proposal.

I will cover what I believe to be cardinal facts that should be sifted and weighed in any consideration of the DBA proposal, and trust that by one example I can illustrate why such is important.

My first comment is not of an engineering nature, but in view of its importance, engineering compromises may be justified on the basis of the strong public interest aspects involved.

No party, to my knowledge, has attempted to discredit the intent of purpose of the DBA "6 to 6" proposal, which would add additional hours of broadcasting time to daytime stations, or has challenged this intent of purpose as itself being contrary to the public interest.

Those who do object and do so on an engineering basis submit that the resulting after-sunset interference (in some cases before sunset on class 1 channels) among the stations concerned, destroy more radio service to the public than is gained.

With the respect, thereto, what then are the bases of the engineering showings which define such total "gains" and "losses"?

It is not unusual after repeated use that axiomatic inferences become associated with simplified terms, which are somewhat different from their original meaning. To clarify by simplification is desirable. But oversimplification of a term lends an air of exactness or finality to a phrase, statement, or definition which is not of itself based upon the laws of exactness or finality; but, is instead, based upon the judgment of men seeking mutually acceptable minimum standards at a given time, and under a given set of conditions. The inflexible physical laws of nature do not change with time, but judgment must be flexible to meet the needs of changing times.

I believe time and time differentials to be one of the most important factors of consideration in the DBA proposal. It manifests itself in many ways throughout all of the data supplied by all of the parties in previous legislative hearings and Commission rulemaking pro-

cedures. It is perhaps the most generally misunderstood of all the facts presented. It is the element of evidence which, without careful consideration of its real meaning and application, can lead to misinterpretation. As an example:

Sunrise and sunset times over the year for a given location have no fixed relation to 6 a.m. to 6 p.m. This varies from day to day, month to month, and is further dependent upon the latitude, and the longitude of the location concerned. Sometimes, however, these terms become almost synonymous in their use.

Without attempting to cover all of the time problems which have been submitted in previous proceedings, permit me to comment briefly on one important exhibit dealing with a clear channel, 640 kc, which has been introduced previously, to illustrate the importance of time, and other judgment factors arising in consideration of the overall problem.

In the hearing before the subcommittee of the Select Committee on Small Business, U.S. Senate, in 1957, a map was introduced, figure 4–B (p. 165 of the printed report) depicting the interference area which would be caused to KFI, Los Angeles, a clear channel station, by the continued operation after their local sunset times until 7 p.m., by stations WOI and WNAD. (Present DBA proposal has been amended to specify 6 a.m. to 6 p.m.)

And I suggest, to follow this conversation, that I believe you have printed copies of the report. The map referred to is page 165.

Illustrating that the time concept can be confusing, it is to be noted that the title of the map is stated as "Effect of operation of daytime stations beyond sunrise/sunset period on service provided by class 1–A stations." Since 6 p.m. is later than sunset and sunrise later than 6 a.m. during some months of the year at Los Angeles, Ames, and Norman, the map connotation would generally apply to the present DBA 6–to–6 proposal, as well as to the former 5 a.m. to 7 p.m. request, now dismissed.

This map portrays that "beyond sunrise/sunset" periods that KFI serves over half of the land area of the United States with a skywave signal, and that all of this area, except on the far west coast near Los Angeles is destroyed by skywave interference from WNAD and WOI during the period between local sunset and 6 p.m., when sunset is prior to 6 p.m.

What are the facts insofar as they involve time and some of the other factors which I believe should be weighed?

THE TIME FACTOR AND ITS EFFECTS

Let us consider what happens during the two "worst" months of the year, i.e., when days are shortest at the station locations concerned, namely January and December. Let us further consider the map in light of the DBA 6–to–6 plan now before this committee.

Since the map is based upon the skywave conditions which exist at 2 hours past sunset, the exhibit can only correctly show what occurs 2 hours (or later) past sunset at Los Angeles (in the Pacific standard time zone) for the evening hours. Its accuracy insofar as 6 p.m. in the midwest is concerned depends upon the relationship of this second hour after sunset at Los Angeles, a relationship which varies over the entire year.

Administratively, the term "second hour after sunset" is used to mean the 60-minute period extending from 60 minutes after sunset until 120 minutes after sunset. However, this use is not in conformity with the time base used to prepare the figures 1 and 2, "2d hour" skywave curves. The industry-Government committee which evolved these curves considered the second hour after sunset with the sunset hour as the hour centered on the sunset times at the two ends of the path. Thus, the term "second hour after sunset" when related to the use of the so-called 2d hour curve must then mean that period beginning 90 minutes after sunset and ending 150 minutes thereafter. Accordingly, I can only conclude that the second hour curves are centered at the 120 minute period after sunset, or at 2 hours after sunset, and would therefore appear to become fully applicable at the second hour, but not before.

The data obtained from figures 1 and 2, depicting skywave signals versus distance apply at the second hour after sunset in the west for an east-to-west transmission, and in the case of a west-to-east transmission at the second hour after sunset at the western transmitter.

I personally prefer to use the term "twilight hours" for the period between sunset and 2 hours thereafter, instead of "nighttime," as being more indicative of changing skywave propagation conditions during this period. To use the term "nighttime" for that period immediately following sunset (or preceding sunrise) lends an air of exactness and finality to practical situations which do not exist;

Six p.m. c.s.t., which would be the DBA signoff hour at both Ames and Norman is 45 minutes before sunset at Los Angeles during the earliest sunset time of the year, December, at Los Angeles, which is 4:45 p.m., P.s.t. Under the DBA plan both WOI and WNAD would have signed off 45 minutes before sunset at Los Angeles. Furthermore, the data used does not become fully applicable until 2 hours after sunset at Los Angeles, or 6:45 P.s.t.

The above discussion has concerned the skywave interference effects from WOI and WNAD to KFI. These are two daytme stations, namely, WOI and WNAD.

The next question is whether, during the times prior to 6 p.m. signoff c.s.t. of WOI and WNAD, KFI would have the extended radius of service portrayed by the map. KFI will not have achieved the full signal values shown on the map until 2 hours past sunset at Los Angeles. In December, by the time that the KFI skywave signal area shown on the map will have been achieved, both WOI and WNAD will have been off the air for 2 hours and 45 minutes, assuming signoff time at 6 p.m. c.s.t.

Revising the situation to reflect earlier than sunrise morning conditions, at 6 a.m. c.s.t. (DBA requested sign-on time during January) at Norman and Ames is 4 a.m., P.s.t. In January, latest sunrise time of the year for Norman and Ames is 7:45 a.m. c.s.t. This is 5:45 a.m., P.s.t. Thus, during the latest sunrise time month of the year, the extent of the interference shown would begin at 4 a.m. in the morning in the P.s.t. zone, and would last until 5:45 a.m. P.s.t., a total average period for this month of 1 hour and 45 minutes per day. Few people on the west coast are awake and listening prior to 5:45 a.m. in the morning; but, referred to Iowa and Oklahoma times, this adds early morning broadcasting service to Oklahoma and Iowa listeners be-

tween 6 a.m. and 7:45 a.m., a period of rural activity in these mid-western areas.

For 6 months of the year, April through September, the presently authorized sign-on time at Ames, Iowa, is prior to 6 a.m. c.s.t. Seven months of the year, March through September, Ames and Norman sunset times fall later than 6 p.m. The map portrayal therefore could not apply to these months under any conditions, and the map, even if fully applicable, could represent only a part-of-the-year condition. The same is true of evening conditions.

RELIABILITY OF SKYWAVES FOR SERVICE

The Clear Channel Broadcast Service has previously testified in docket 6741 as to the marginal reliability of skywave service signals in the magnitude of 0.5 Mv/m. (50 percent of the time). Docket 6741 is the parent *Clear Channel* case.

Speaking of exhibits presented by other parties showing 0.5 Mv/m., 50 percent skywave services, which in the case of nondirectional 50-kilowatt stations provides circular contours at about 715 miles from the class 1 station, the CCBS written testimony (1947) on page 4 thereof, states as follows:

> Before April 1946, when exhibit 109 was put in evidence, we had to make assumptions as to the signal levels required to override noise. These assumptions led to the procedure on the part of many persons of drawing 715-mile circles around each 50-kilowatt, nondirectional, clear-channel station as an indication of the radius of service. This was carried to the point of counting the number of overlapping skywave "services." *At every stage we had to contend with this obvious fallacy.* It was the principal basis for the attack on clear channels in the 1938 hearing. And *even in this hearing, this thoroughly discredited method has been used to draw conclusions concerning skywave coverage.*
>
> The technical exhibits of the Regional Broadcasters' Committee are a good example of this procedure. Their witness has shown ways in which clear channels can be duplicated across the country. The duplications, according to him, result in more skywave and groundwave service. *Had he analyzed the theoretical skywave service in the realistic manner required by exhibit 109, he would have found that so-called skywave service was of a very low order of reliability.* [Emphasis supplied.]

If the above applies to skywave signals as strong as 0.5 Mv/m., then it must be concluded that still weaker skywave signals must be of even lower reliability.

Next, what is the nature of the KFI skywave service shown on this map which is shown as "destroyed" on figure 4–B? Here the judgment of experts as to its acceptability is injected.

The present rules of the Commission do not define the limits of skywave service except inferentially. Section 3.182(i) of the rules states:

> Secondary service is delivered in the areas where the skywave for 50 percent or more of the time has a field intensity of 500 Uv/m. or greater. (The secondary service area of a class 1–A station should be considered as having this limit only for determination of service in comparison with other stations.)

Now, for the record, 500 microvolts is the equivalent of the 0.5 millivolt per meter value previously mentioned.

The 500 microvolts or 0.5 millivolt per meter skywave contour is the inner circle surrounding Los Angeles and is labeled on the map as 0.5 Mv/m. contour 50 percent.

I am referring to the labels which appear on the map on page 165 of the record of the Senate hearings on the DBA.

The service capabilities of the KFI skywave signal fall below this level, in the shaded area extending to and beyond the 0.1 Mv/m. contour 50 percent (outer circle), and skywave signal levels below 0.5 Mv/m. are not considered in the above skywave service definition, yet "service" comparisons among stations are inherent in the exhibit itself.

Skywave signals for service purposes are considered to be acceptable on the basis of a median field strength value which is exceeded for 50 percent of the time, even though the instantaneous signal levels during the fading periods drop below this median value for the other 50 percent of the time. Other factors such as interference from other stations, natural static, receiver sensitivity, automatic volume control action, and manmade "noise" contribute to the service capabilities of such skywave signals.

I would like to mention that foreign station interference to KFI is not considered on the map.

The United States already accepts interference to the KFI skywave service area from CMHQ, Santa Clara, Cuba, 640 kilowatts under NARBA.

NARBA defines this accepted interference as follows in footnote 1, "Observations" annex 3.

> The United States of America accepts the derogation of the priority on this channel with the power specified and on condition that the interfering 10 percent skywave signal does not exceed 25 Uv/m. at any point within a circle of 800 miles radius around the class I station.

In this case KFI is the class I station. In nontechnical terms NARBA agrees to accept a limitation of the skywave service area of KFI which approximates the radius of the inner "0.5 Mv/m. contour 50 percent" circle shown on the map. All shaded area beyond this radius, though shown as a KFI skywave service range on the map, is, or may be, destroyed at the will of Cuba. In other words, the KFI channel is not "clear" in the sense that KFI's signal is completely interference free.

NARBA also provides for operation on 640 kilocycles of a 10 kilowatts station CBN, St. Johns, Newfoundland. This station will also cause interference to the eastern portion of the KFI shaded service area, shown on the map.

DOMESTIC ADJACENT CHANNEL INTERFERENCE

There is also an adjacent channel problem of interference.

The KFI "after sunset" skywave shaded signal service area extends to the east into the western part of Tennessee.

WSM, Nashville, Tenn., operates with 50 kilowatts on 650 kilocycles, on the next channel to that used by KFI. West of Nashville the evening buildup of the WSM skywave signal will occur much earlier than is the case of the received skywave signal in this area in the early evening from KFI. Also, in the midwest area (nearer to Nashville than to Los Angeles), the WSM skywave signal will be much stronger than the KFI skywave signal, even after full second hour evening conditions are reached all over the country. This will also cause adjacent channel interference to the KFI skywave signal.

Now, I would like to mention in addition that since 1949, station WOI, at Ames, Iowa, has had either a special service authorization

or a special temporary authorization, the effect of which was to permit WOI to begin operation every morning at 6 a.m. Consequently, if the interference, as portrayed on the map, actually would have been effective, this condition would have already existed to a considerable extent by the very fact that WOI is presently beginning its operation at 6 a.m., central standard time, even though it is a daytime station. It does, however, do this under a special temporary authority.

I have tried to show, by this one example, how oversimplification of a complex phenomenon fails in its purpose and can lead to erroneous conclusions of what would take place were WOI and WNAD allowed to operate from 6 a.m. to 6 p.m., central standard time.

Bear in mind that the map title, though the map was submitted in a previous proceeding, on a previous DBA 5-to-7 request, is as applicable to the "6 to 1" proposal as it was to the former request, since 6 a.m. falls earlier than sunrise and 6 p.m. later than sunset during certain months of the year at the locations concerned.

Now, to regional channel considerations:

There is virtual agreement among all parties that what happens to skywave signals after sunset will be reciprocally true in the immediate before sunrise hours. The effects of skywave transmissions become noticeable at about 2 hours before sunset and gradually build up in intensity until a period of 2 hours after sunset, at which time a maximum norm is established. This level is maintained throughout the hours of darkness until about 2 hours before sunrise at which time skywave signals begin to decrease in strength until 2 hours after sunrise, at which time they have diminished to such a low value that their interference effects are minimal.

There is a Commission rule, applicable to regional channels, 3.87, which permits all regional channel stations to begin operation with their normal licensed daytime facilities prior to sunrise beginning as early as 4 a.m. local standard time. A large number of full-time regional stations so operate, and this privilege is extended to daytime stations. This is a permissive rule in all cases.

Since morning and evening skywave propagation conditions are similar, though reciprocal, with respect to advancing time, it would seem logical, if regional stations are allowed to operate with their daytime facilities prior to sunrise, that the effectuation and extension of this rule to provide daytime station operation after 6 p.m. local time, is justified by precedent. Rule 3.87 has been effective for over a decade, and there has been no move to my knowledge by any regional group, to eliminate the rule. It would appear that this rule has operated to the advantage of all regional stations, whether full-time or daytime only. Only a few instances have arisen over the years where formal complaints of undue interference have been filed by full-time regional stations against the use of these earlier-than-sunrise hours by a given daytime station, although such is permitted under the rule.

While it is true that 3.87 permits operation as early as 4 a.m., it certainly is to be recognized that only a few stations throughout the country begin their operation as early as 4 a.m. in the morning. However, most regional radio stations begin their daily operations at or shortly after 6 a.m. local time. Thus, it would seem illogical to argue that the DBA request for "6 to 6" operation is not in harmony with 3.87, on the basis of the fact that there are only a few stations on the air as early as 4 a.m.

By 6 a.m. or shortly thereafter, the majority of radio stations are on the air with their daily schedules, and the DBA proposal would merely extend this condition in the evening hours until 6 p.m., with virtually no change in the overall nationwide interference picture, than would be the case after 6 a.m. with all regional stations operating with daytime facilities under 3.87. So far as daytime regional stations are concerned, the DBA "6 to 6" plan would merely change the morning authority to so operate from a permissive rule to a licensed authorization. The only really effective change for regional daytime stations, would be to extend the afternoon schedule from sunset to 6 p.m., during such portions of the year when local sunset occurs before 6 p.m., at the location concerned, and this would be for only a part of the year.

Also, though before sunrise operations on regional channels under 3.87 are not recognized by treaties, this domestic rule has been effective during former treaties, and continues to be effective under the newest treaties.

Now to some of the factors which I believe need understanding and clarification to properly consider the overall problem. For brevity I will confine myself to what I feel to be the more pertinent.

(*a*) In considering an allocation problem the importance of standards and criteria, and the choice of such is fundamental to reaching a decision. In the Commission's report and order in docket 6741, dated April 15, 1958, the Commission has aptly stated this fact:

> The point we make here is that no method of depicting service can convey the full facts, and that we must be mindful of the fact that a determination of the extent of available service depends upon the standards and criteria used in defining service.

I point out that several different approaches to interference effects and standards have been used by the numerous parties in the composite of the evidence which has previously been filed, and there is no common basis of the facts portrayed.

(*b*) There is no sharp demarcation between day and night interference effects as some of the evidence would show. As a practical matter, the instant of sunrise or sunset is only an instant in the transitory process of daytime skywave propagation conditions changing over to full nighttime conditions. Skywave interferences already exist to some extent at the instant of sunset.

(*c*) In the case of clear channel station service areas (daytime), that area outside of the 0.5 millivolt per meter groundwave contour is defined as the "intermittent service area." The service capability of these lower groundwave field intensities is defined by the Commission in section 3.11(c) of the rules, as follows:

> The term "intermittent service area" of a broadcast station means the area receiving service from the groundwave but beyond the primary service area and subject to some interference and fading.

Nighttime skywave service of a clear channel station is defined as a "secondary service area." The Commission's definition thereof is (sec. 3.11(b)):

> The term "secondary service area" of a broadcast station means the area served by the skywave and not subject to objectionable interference. The signal is subject to intermittent variations in intensity.

Recognition of skywave service and intermittent service areas applies only to class I stations.

The CHAIRMAN. We are going to have to recess for a few minutes to answer the rollcall. We will be right back.

(Short recess.)

Mr. BROCK (presiding). The meeting will come to order, and the witness will continue.

Mr. DILLARD. (*d*) Any full second hour interferences which may result in unusual cases are seasonal under the "6 to 6" proposal and will not occur at all during some months, and only during such months as they do occur, will exist only during portions of the extended in each day.

(*e*) In such months and instances as part-of-the-time second hour interferences do exist between local sunset and 6 p.m., or between 6 a.m. to local sunrise, the majority of time during the year within these extended hours occurs during twilight periods, when skywave interferences have not reached the levels indicated by second hour curves.

(*f*) The median 10-percent values of interference signal obtained from any of the 10-percent curves do not represent an absolute limit beyond which no service is extended to lower field strength values. This is not a sharp cutoff radius that represents an acceptable service, or no service at all, depending upon whether the area concerned is within or outside the contour line. The present criteria of acceptability has been judged to be that free of interference for or better than 90 percent of the time.

And deviating just a moment from the prepared text, the contour line which has been shown in many representations—it is impossible to make showings without some sort of a representation of this type—where the term "interference free limit" or "the limit of service" is concerned, is not strictly applicable in the sense that this line is a sharp cutoff point insofar as service is concerned. It is a cutoff or a limit to the extent that service, under the criterion, is rendered to this distance, but a grade of service of a lesser criterion extends beyond this distance.

(*g*) Many of the comments filed in opposition to the DB plan include statements of populations and areas "lost" to daytime stations for the after-sunset or pre-sunrise hours when such falls after 6 p.m. or before 6 a.m. In almost all cases involving interference showings to class II and III daytime stations, this "loss" has been considered as within the area between a computed RSS interference limited contour based upon second hour nighttime curves and the normally protected daytime 0.5 multivolt per meter groundwave contour, the latter at a time when skywave interference is of no appreciable value.

For an explanation to the committee, the computed RSS interference is a manner of determining the signal value, the minimum signal value, which will receive interference from skywaves. It is a method of computation—root, sum, and square.

Any showings claiming "losses" of areas and population by daytime stations before or after sunrise or sunset are fictitious when based upon a daytime normally protected contour based only on groundwave interferences. There is no factual loss of service to such daytime stations since they are not presently on the air during these hours. Their operations, regardless of interferences received, can only represent a gain of service to the extent that they are able to render such service.

61308—60——15

(*h*) Assuming severe interference instances, this is not a regularly occurring phenomena, day in and day out. Depending upon the circumstances, the extremes of interference, as second hour portrayals show, may occur only at the limits of the extra hours requested, and then only within certain months. The interferences at other times for all practical purposes are nonexistent, depending on the sunrise-sunset hours involved, their relation to 6 a.m. and 6 p.m., and the months of the year.

(*i*) A skywave signal, whether it be of an interfering nature or of a service nature, is not constant with time. Skywave signals fluctuate from minute to minute, hour to hour, evening to evening, week to week, month to month, and even from year to year. Therefore, skywave signal strengths are evaluated in terms of statistical norms. Groundwave signals receiving skywave interferences are presently judged as acceptable when the groundwave signal is free of interference for 90 percent (or better) of the time.

And I might mention that that is the criterion which is applied showing the nighttime coverage of a station, of a daytime station—or not the nighttime coverage, but the twilight hour coverage. And it is under the 90 percent of the time criterion. That does not mean that service is not rendered beyond the lines or circles that are drawn.

(*j*) A number of our clear channels are not "clear" in the sense that the service areas of our own class I stations are restricted by other station interferences. Mostly, such derogations of service are caused by foreign stations, and the United States has accepted such limitation of service under treaty provision.

(*k*) It is not unusual for domestic U.S. standards to be different from those defined by treaty for use between the United States, and other countries.

Thank you, gentlemen.

Mr. BROCK. Thank you, Mr. Dillard.

Are there any questions, Mr. Avery?

Mr. AVERY. I have just one question, Mr. Dillard.

Let me say that your statement, of course, is very technical in its nature. I would like to say I completely understood all of the information that you submitted to us, but in all good conscience I could not so state. Perhaps I could with some study. But I do not mean to infer that it was not presented as well as it could be to laymen such as we are.

You have made, I presume, a persuasive case here for engineers. I think the committee, at least, is interested possibly in some tests. Were you in the room yesterday when the hearings were underway and you heard some discussion between the several members of the committee and the various witnesses about the desirability (1) of the test and (2) just how should such test be conducted so as to be considered fair and equitable and not discriminatory against any of the segments and parties that are concerned?

Now, if you could so describe it to me in your own words, what would be a fair test? I do not want to put words in your mouth. I was going to try and summarize it, but I am going to ask you what you would consider an adequate test on this proposal.

Mr. DILLARD. I always like to approach a problem of this kind by considering the worst possible conditions which could arise.

Now, what really are the serious problems involved? The serious problems, as I see it, really occur possibly during November, would reach a peak in December and January. The reason for that is that those are the months when the days are shortest.

I would think, since rule 3.87, as it is now written, has not been objected by regional stations——

Mr. AVERY. What is that?

Mr. DILLARD. This is the permissive rule. It has not been objected to by any group. There may have been a few individual objections, but they have been very small in number.

And further, even the full-time stations themselves obviously would benefit from this mode of operation. And the test most logically could be applied to the regional channels, merely as an extension of 3.87, from early morning hours, from permissive rule, on a temporary basis, through 6 p.m.

Now, that could be dated. It could be limited in its scope as far as time is concerned. As Mr. Livesay suggested yesterday, nobody is talking in terms or thinking in terms of a foot in the door. I just do not see, having gone through this whole proceeding. how there are enough engineers in Washington, or how, even if we went outside and garnered all we could, we could statistically come up with all of the facts that would give us an every-15-minute story of what happens among all the stations.

The only way that I can see that this will possibly work is by a trial. I would think the least amount of harm would come by applying it to the regional channel. And further, the regional channel stations, the full-time stations, would also have the privilege of so operating until their 6 p.m.

And I mention that for this reason—that over the years it has been the practice, in regional stations, to install directional antennas at night. Now, these nighttime directional antennas were aimed at the principal city. They were so located that they were away from population, and theh signal was directed over the major core of poplation. But we have had major population changes in the larger cities and in most cities. And, for instance, in Washington and in many other cities in the United States, the populations have built up and settled behind these directional antennas. And many regional stations today, when they go to directional antennas at night, really do not adequately service or serve the suburban populations which have grown up behind them.

It would be to the advantage of some daytime stations—and many of them do—either to operate with their higher power, which they have in the daytime, or to remain nondirectional until 6 p.m.

I can see that both sides of the fence might not have as many objections to this type of test as if we were to pick out some of the clears at this time.

Now, that is my own personal thought.

Mr. AVERY. In effect, you are saying this: We have already tested the a.m. features of this. Is that right? For all practical purposes?

Mr. DILLARD. That is right. The morning features.

Mr. AVERY. And there may be one figure that is not in the record. Maybe you are not the appropriate person to direct this question to. I believe it was testified yesterday that we had 1,250 stations, daylight stations, on regional channels.

Now, are you in a position, Mr. Dillard, to tell the committee: Of these 1,250 daylight stations on regional channels, how many of them have availed themselves of an earlier than sunrise broadcast schedule?

Mr. DILLARD. We represent a large number of a.m. schedules, and practically every one that I know anything about, as to their operations, have availed itself of this type of operation. It has been a high percentage.

Mr. AVERY. A high percentage. You think maybe as many as 750 or a thousand?

Mr. DILLARD. On the regionals? Oh, yes.

Mr. AVERY. That have availed themselves of this permissive rule of broadcasting earlier than sunrise?

Mr. DILLARD. That is right. And I not only think but I can make the statement that, based on my association with our full-time clients, full-time stations, most of them prefer to go to the nondirectional operation in the early morning, because maybe the coverage is not as far out, because of the more uniform coverage area they get in the early morning hours with their nondirectional antennas and daytime power.

I am not saying that interference does not exist. Please understand me. But I am just going on the basis of the practical fact that we have had this rule in effect for about 14 years, and to date there have been very few objections.

Mr. AVERY. Just one more question. I used this figure 750, just pulling out of the air possible a.m. stations that are broadcasting before sunrise. Are they geographically pretty well scattered, so that it would be a pretty good representation of all of the areas, or have they concentrated, so that we might have voided the results of a test in some areas?

Mr. DILLARD. Well, I think that the geographic distribution works out—well, it does—just about in the manner of the population distribution. And where there is little population, you find the stations farther apart. The ones that are farther apart will have less interference between them.

Mr. AVERY. Well, that is a simple matter of economics. Where there is a market, there is a station.

Mr. DILLARD. That is right.

Mr. AVERY. It is just as simple as that?

Mr. DILLARD. That is correct.

Mr. AVERY. That is all, Mr. Chairman.

The CHAIRMAN (presiding). Mr. Younger?

Mr. YOUNGER. Mr. Dillard, do you think it would be possible to agree with the FCC to take a certain area, the KFI area, if you want to, or this area that you had yesterday, in Tennessee, I think, and put the daytime stations on a 6-to-6 basis and see what the people who have radios say about?

I think we are questioning about something that we could very easily find out about in a short time, by taking an area and putting those daytime stations on a 6-to-6 basis, and try it out, and let the people who have the radios determine whether there is an interference.

Mr. DILLARD. Mr. Younger, it just so happens that the two instances that you have mentioned already have turned out, because WOI goes on the air under this temporary authorization every morning at 6 a.m.

Mr. YOUNGER. But they do not go to 6 p.m.?

Mr. DILLARD. No. This is partial trial.

Mr. YOUNGER. I know that. But take that same territory and have the stations broadcast in the wintertime, in those areas that you talk about, during November, December, and January. Then let us hear from the people that have radios, as to whether or not there is the interference, or whether or not they get a better signal or a poorer signal. Why cannot that be done to determine which is right or wrong?

Mr. DILLARD. I did not quite fully answer your first question.

In the Spartanburg case, again, while the maps shown indicated what happened at night, it should be pointed out that that particular station, WDPA, is already operating in a situation—whether he himself is operating with his daytime facilities I do not know; but he already is in a morning period, where daytime stations are operating all around him.

So the portrayal that these maps showed, indicative of night, really probably are not correct in the sense that he might himself stay on with his daytime facilities after sunset.

Now, all I am trying to say is this: That the two instances that you have made already are trial grounds, except that they happen to be only in one period of the day.

Now, if the engineers are right—and I go along with the theory a hundred percent—that there is reciprocity in the skywave effects, then certainly as far as the regionals are concerned, there would be no difference of 6 p.m. in the evening, as there would at 6 a.m. in the morning; because these sunset times, as they shift up and about the noon axis, will average themselves out.

That is another thing.

Mr. YOUNGER. I think you will agree that from 4 a.m. to 6 a.m. there are not nearly as many radios on as there are in the evening.

Mr. DILLARD. That is right, sir.

Mr. YOUNGER. And you would not receive so many kicks as far as interference is concerned.

Mr. DILLARD. I am not considering the 4 a.m. situation at all, because I think we have to deal with the 6 a.m. on.

Mr. YOUNGER. Even 6 a.m. There are very few radios except in farm areas, that are on at 6 a.m. A lot of them are on at 6 p.m. and 7 p.m. and 5 p.m.

I do not want to argue. I would like to know from you, Mr. Dillard, whether—yes or no—that test could be made.

Mr. DILLARD. Yes, sir.

Mr. YOUNGER. All right. That is all I want to know.

I am through.

The CHAIRMAN. Mr. Dillard, thank you very much for your presentation.

STATEMENT OF BENEDICT P. COTTONE, COUNSEL, DAYTIME BROADCASTERS ASSOCIATION, INC.

Mr. COTTONE. Mr. Chairman, yesterday a considerable amount of discussion was had as to the numbers of stations on these channels. In order to try to assist in that understanding, we took out of a Commission decision a table which shows, by the different classifica-

tions, the standard broadcast stations that were authorized on March 1, 1959. I understand that there will be submitted later, by one of the other parties, a table which will bring that right down to date; but for present purposes, in case the committee feels it desirable in order to answer questions, for answering questions, we have submitted this.

I might point out that there is, I would say, no change as to daytime stations today on the U.S. I–A channels, as there were on March 1, 1959, and the same would be true of the U.S. I–B, the number of daytime stations being 51, because of this freeze that I have been talking about. There has been practically no addition in new daytime stations since that time. So at least those two figures would probably be fairly accurate as of today.

There will have been an increase in the figures opposite the class III daytime stations, of 975. And you will get up-to-date figures later.

Mr. AVERY. Could I ask one question?

I did not hear all you said. Just to refresh my memory, as we use this letter B, does that refer to regional channels?

Mr. COTTONE. No, the regional channels are opposite 7. They are class III.

Mr. AVERY. Could you just give us a little legend on this, then? What is A?

Mr. COTTONE. I–A are the clear channel group.

Mr. AVERY. I–A is clear channel?

Mr. COTTONE. Yes, sir. I–B is also clear channel.

Now, when we talk about Canadian I–A, Mexican I–A, and Bahamas I–A, those are all foreign clear channels. They are the 14 foreign clear channels.

Mr. AVERY. What is the difference between I–A and I–B, then?

Mr. COTTONE. The difference between I–A and I–B, then, is that there is only one I–A station on any channel in the entire United States. And while they may put other stations on those channels in the daytime, there are no other stations that can be put on those channels at night. You can put daytime stations on them, but no nighttime operation, other than the one single class I–A channel.

Mr. AVERY. What is I–B, then? They do put other stations on at night? Is that the difference?

Mr. COTTONE. Yes. You can put a limited number of other stations on at I–B channels at night.

Mr. AVERY. Is that right?

Mr. COTTONE. That is right. A limited number of other stations. There are 19 I–B stations.

No. I beg your pardon. We generally have two I–B stations on each channel. That is the difference.

Mr. AVERY. Two?

Mr. COTTONE. Yes. And then in addition there would be the secondary stations on those channels, which may be a full-time station or a daytime only station. They call those class II stations. They are not so stated on this chart, but they are called class II stations.

Mr. AVERY. What are class IV?

Mr. COTTONE. The local channels, full-time 250-watt stations, the kind of station that Chairman Harris was talking about yesterday in his town of El Dorado. I should say "city."

Mr. AVERY. I do not quite understand the difference between I–B and regional, because if you have more than one station on one channel at night, is that not about what a regional channel is?

Mr. COTTONE. No, because the I–B station has a much greater protected service area. They serve a much wider area. That is the difference.

Mr. AVERY. You only have two on the I–B?

Mr. COTTONE. That is right.

Mr. AVERY. Whereas the ordinary regional channel might have as many as what?

Mr. COTTONE. Oh, there have been as many as—I think it has been indicated that there have been as many as 100. No, not that many, but maybe anywhere from 60 to 75.

Mr. AVERY. Could we have Mr. Barr respond to that question?

How many stations could be assigned to one regional channel?

Mr. BARR. We estimated yesterday that the average was somewhere in the neighborhood of 25 stations on a regional channel.

The CHAIRMAN. 25 times 19 is more than 161, according to my figures, so I guess the more you figure on this the more confused you can get. This means that on I–B you have 19 channels. Is that correct, Mr. Barr?

Mr. BARR. I think there are 21.

There are 19 I–B channels on which the United States has I–B stations.

The CHAIRMAN. There are 19 I–B channels on which the United States has one station?

Mr. BARR. I–B stations. The channels and the stations are categorized the same. On 2 of the 21 I–B channels we do not have a I–B station. Only Mexico and Canada have.

The CHAIRMAN. Now, you have got 19 daytime stations?

Mr. COTTONE. This is a Commission chart. It was taken from a Commission decision.

The CHAIRMAN. Well, you presented it?

Mr. COTTONE. Yes, sir. The 19, as I understand it, does not represent the number of I–B stations, but represents the number of I–B channels.

The CHAIRMAN. That is right. Now, you have 51 daytime stations on the 19 channels?

Mr. COTTONE. Exactly.

The CHAIRMAN. Then you have 107 full-time stations on the 19 channels?

Mr. COTTONE. That includes the 34 class I–B stations.

The CHAIRMAN. The 34?

Mr. COTTONE. I believe there are 34, are there not?

The CHAIRMAN. You have not got that on here.

Mr. COTTONE. They have not separately shown that.

The CHAIRMAN. Well, anyway, it is 107 full-time stations?

Mr. COTTONE. No, they have not. We stated in our statement yesterday—and by our count there were 34 class I–B stations. Those are full-time stations. The remainder are, therefore, the class II full-time stations. The difference between 137 and 34 would represent the full-time stations that are not these large area I–B stations.

The CHAIRMAN. What would they be, then?

Mr. COTTONE. They would be what the Commission calls class II stations.

The CHAIRMAN. Class what?

Mr. COTTONE. Class II stations.

The CHAIRMAN. That means class II is smaller than class I; is that right?

Mr. COTTONE. Exactly.

The CHAIRMAN. Or does it go the other way?

Mr. COTTONE. I think that is a correct interpretation of it.

The CHAIRMAN. Dr. Frank G. Kear.

Dr. Kear, will you identify yourself for the record, please?

STATEMENT OF FRANK G. KEAR, TRIANGLE PUBLICATIONS, INC. (RADIO AND TV DIVISION), AND AMERICAN BROADCASTING-PARAMOUNT THEATRES, INC.

Dr. KEAR. My name is Frank G. Kear. I was born in Minersville, Pa.; am presently residing in Chevy Chase, Md. I am a graduate engineer and a registered professional engineer in the District of Columbia. I have engaged in engineering work involving radio wave propagation phenomena since 1928, and I am a partner in the consulting engineering firm of Kear & Kennedy, with offices in Washington, D.C.

Kear & Kennedy are consultants for Triangle Publications, Inc. (Radio and TV Division) and for American Broadcasting-Paramount Theatres, Inc., and I have been requested by these firms to appear before the Subcommittee on Communications and Power for the purpose of presenting to the subcommittee certain engineering facts which I believe to be relevant to consideration of H.R. 6676, H.R. 10275, and other bills of a similar nature.

The CHAIRMAN. You may proceed.

Dr. KEAR. I have a prepared statement, Mr. Harris, with several rather lengthy examples given at the conclusion of the statement. If it would be in the interest of expediting proceedings here, I might read just the text of the statement, refer to about two examples, and introduce the rest into the records by turning over my prepared statement, if that is agreeable.

The CHAIRMAN. Very well. You may proceed as you desire.

Dr. KEAR. Thank you.

Our immediate concern is legislation presently being considered proposing amendment of the Communications Act of 1934, and in particular H.R. 6676 and H.R. 10275, dealing with the hours of operation of certain broadcasting stations. We believe that it would be helpful to the committee in their consideration of this proposed legislation if certain facts concerning the propagation of electromagnetic waves and the relationship of these facts to the proposed legislation were to be placed in the record.

The proposed legislation contemplates a change in the Communications Act of 1934 which, if adopted, would extend the hours of operation of certain standard broadcast stations commonly referred to as daytime stations. These stations share the standard broadcast spectrum with those stations known as full-time stations and each available standard broadcast channel is currently occupied by a combina-

tion of daytime and full-time operations which, since they transmit on the same carrier frequency, must be carefully designed and controlled in order to avoid destructive interference between and among these stations. This would result in little or no interference-free service to the public. Consequently, the FCC by its rules and regulations controls and limits the transmissions from these stations to the end that insofar as possible the areas and populations served are maximized while the areas of interference are reduced to a minimum.

We are concerned here with radio transmission in the standard broadcast band, namely 540 to 1600 kilocycles. When energy frequencies are radiated from an antenna system, the significant part of that energy, which arrives at a distant point, reaches that point by one of two methods of propagation. The first of these is that portion of the energy which travels over the surface of the ground and is known as the groundwave; the second is that which is directed up into the atmosphere and which, by reason of the ionizing action of the sun on the atmosphere, is deflected from a straight path and returns to the earth, this portion being known as the skywave.

Many years of study of both of these modes of propagation have resulted in the development of formulas and charts which permit prediction, with reasonable accuracy, of the amount of this energy which will arrive at any given point by either mode of propagation. Such formulas, charts, and graphs as are useful in the administration of the broadcast spectrum have been incorporated into the rules and regulations of the Federal Communications Commission. A more exhaustive treatment of the same subject is found in many standard texts and books of reference.

If the broadcast band was wide enough so that each station could have an individual channel, the control of interference would be very simple and a broadcast station could be expected to provide service out to the distance at which the signal diminished to a value where the local noise made it unusable. However, the broadcast band is limited in extent and it is necessary to put many stations on each channel, thereby creating a situation where numerous signals having the same carrier frequency but with various relative magnitudes exist simultaneously. This would create an impossible interference condition unless the relative magnitude of each operation was carefully controlled. The FCC accomplishes this control with its rules and regulations in which is set forth the power permitted to each station, the nature of the permitted radiation pattern, and the hours of operation. At the same time, they establish the area about a broadcasting station which that station is intended to serve. The various technical rules and regulations of the Commission are thus tailored to insure that service of a predetermined quality will be provided to the people residing within the specified area about the transmitter.

Let us return now to the propagation phenomena involved in making certain that the proper signal reaches the area to be served, while at the same time the undesired signals are reduced to a level such that they will not create interference to the reception of the desired signal.

At midday, the action of the sun upon the upper atmosphere is such that radio waves in the broadcast band entering this atmosphere are not reflected to any appreciable extent, and only a negligible amount of skywave returns to the earth. This means that during the period

extending from approximately 2 hours after sunrise to 2 hours before sunset, only the groundwave method of propagation need be considered. Calculations of the field strength existing at any point can be made on the basis of groundwave propagation curves. Broadcast stations which operate during this period of the day may therefore be authorized to operate on an appropriate channel already occupied by operating broadcasting stations so long as they can adjust their power and radiation pattern to satisfactorily serve the community in which they propose to operate, while at the same time limiting their radiation toward other stations on the same channel to a point where their signal does not interfere with the service presently being provided. These calculations are all based upon use of the groundwave propagation curves only.

It should be noted at this point that, on the basis of a substantial amount of experience, the FCC determined that an undesired signal would not create objectionable interference to a broadcast station service area if the field strength of the undesired station did not exceed 5 percent—or one-twentieth—that of the desired station. Protection calculations are therefore based upon maintaining this ratio between desired and undesired signals.

If we now consider a later period in the day as the sun heads toward the horizon, the upper atmosphere begins to take the form of a cloudy mirror and a portion of the energy radiated from the broadcast station into the atmosphere returns to the earth, adding to the signal already there by virtue of the groundwave propagation effect. As the sun approaches the horizon, the amount of energy returned to the earth increases, reaching a near maximum value some 2 hours after sunset and continuing at approximately this value until 2 hours before sunrise, at which time this phenomenon reverses itself and the signal falls off slowly through sunrise 2 hours after sunrise, at which time there is customarily very little signal received by way of skywave. As a result of extended periods of measurement of the amount of signal returned at various times of the day and various times of the year, it has been possible to prepare charts and graphs which can be used to predict with reasonable accuracy the amount of skywave signal which will be received under average conditions at any particular time of day. These charts and graphs are also included in the Commission's rules and regulations to the extent necessary for use in allocation.

Since this skywave signal adds to the signal already present, it means that the interference conditions become more pronounced as sunset approaches and increase at a predetermined rate until about 2 hours after sunset, at which time they remain reasonably constant beginning to decrease 2 hours before sunrise and gradually falling off to a negligible value some 2 hours after sunrise. During these periods of skywave transmission, broadcast stations which in the middle of the day had afforded complete protection to each other in accordance with the rules and regulations of the Commission, no longer afford this protection and the service areas of the operating stations are subjected to an increasing amount of interference as darkness approaches.

The FCC prevents this interference from becoming destructive to all service in several ways. It requires certain stations on each chan-

nel to restrict their radiation and/or power as night approaches to the extent that the calculated combined field of groundwave and skywave produced within the service area of any other station on the channel will be maintained at a value such that no interference is created; that is to say, to a value less than 5 percent of the field from the desired station existing within the service area.

In order that this can be accomplished without imposing too drastic a restriction upon the radiation and power of the stations and upon the number which can be accommodated on a single channel, the FCC provides that the nighttime service area in general will be somewhat more restricted in extent than the daytime service area. The nighttime service fields may be established at a figure 5 to 20 times as high as the daytime service fields, thus permitting the interfering fields to increase by the same amount. However, even with this relaxation it is not possible to accommodate the same number of stations on a channel at night as can operate during the day. The requirements as to restrictions of radiation patterns and power would be such that it would be difficult, if not impossible, to achieve an engineering design which met all of the requirements and if a design could be accomplished, the station would be so limited that it could no longer serve the community in which it operated.

Recognizing this situation, the FCC authorizes the operation of certain stations during daytime hours only, this being the period when the requirements imposed by the existence of substantial skywave signals do not exist and protection to the operating stations can readily be afforded. Such action permits efficient use of each channel, both day and night, and provides daytime service to numerous communities which could not otherwise have received such service. The daytime stations are licensed to operate between the hours of local sunrise and local sunset and, while some interference is created by the skywave signals from these daytime stations, near the hours just before sunset and just after sunrise, the interference has not risen to the value which it reaches after the sun has set. This interference, however, is there during the hours which the daytime stations are operating and, furthermore, the daytime stations are subjected to similar interference during this period from all of the daytime and the full-time stations on the channel.

Considering the foregoing discussion, it is apparent that if the daytime stations were permitted to operate over longer periods than presently allowed, there would not only be a serious disruption of the service rendered by the full-time stations on any channel but the daytime station itself would be subjected to destructive interference to the extent that it would not provide service to the community in which it is located, while at the same time it would destroy presently existing services in numerous communities throughout the country.

I will now give just three examples from the list of examples I have here. The examples are taken from material filed in FCC Docket 12274.

Triangle Publications, Inc., for whom I am consulting engineer and in whose behalf I am appearing here today, owns and operates three radio stations which would be adversely affected by extension of hours of operation of daytime broadcasters.

One of these is radio station WNBF in Binghamton, N.Y., which operates on a frequency of 1290 kilocycles with a power of 5,000 watts,

employing a directional antenna at night to afford protection to the other stations on the channel. Under the existing rules of the FCC, WNBF serves to the 3.29 millivolts per meter contour at night. This includes an area of 625 square miles in which reside a population of 183,800. If the presently licensed daytime stations were permitted to operate beyond the sunset period, WNBF would be limited to the 18.28 millivolts per meter contour, which includes only 129 square miles, or a loss of nearly 80 percent of the service area. There is an accompanying loss of 40,000 in the number of people served with an interference-free signal, or a loss of approximately 21 percent.

Another standard broadcast station owned and operated by Triangle Publications, Inc., is KFRE in Fresno, Calif. This station operates with a power of 50,000 watts, controlling its radiation by means of suitable directional patterns. It operates on a frequency of 940 kilocycles. The existing nighttime interference free contour of KFRE is 3 millivolts per meter. This contour encompasses an area of 9,260 square miles and includes a population of 518,600. If the presently licensed daytime stations were to operate as proposed, objectionable interference would be created to the 5.1 millivolts per meter contour. This will reduce the area encompassed by the interference-free contour to 6,010 square miles, a loss of 35 percent, which is accompanied by a loss of 81,400 people in this area, 16 percent of the population presently served.

The third Triangle station to be adversely affected is WFIL in Philadelphia, Pa., with an assigned frequency of 560 kilocycles; its operating power is 5,000 watts and it employs a directional antenna day and night. Under the present rules of the FCC, at 1 minute past sunset when the daytime stations have left the air and the full-time stations have shifted to their appropriate directional patterns, the interference free contour of WFIL is 0.43 millivolts per meter, encompassing an area of 11,803 square miles. This includes a population of 4,891,700. Operating under the proposal to extend these hours of operation, at 1 minute past sunset with the daytime stations remaining on the air, the interference free contour of WFIL would be increased to 0.6 millivolts per meter. The area served would be reduced 17 percent from 11,800 square miles to 9,836 square miles, and the population served would be reduced 5 percent to 4,676,700. 215,000 people in an area of 1,967 square miles would lose service.

During the winter months when sunset occurs early in the day, the daytime stations will under the current proposal be permitted to remain on the air until the interference created by the skywave signal approaches the second hour after sunset value. At this time under the present rules, the interference free contour of WFIL is 3.8 millivolts per meter. This includes an area of 3,000 square miles and a population of 3,690,000. With the daytime stations permitted to remain on throughout this period, the interference free countour will be increased to 5.9 millivolts per meter, reducing the population served to 3,494,00, a 6 percent loss in population, and reducing the area served to 1,961 square miles or a loss of 34 percent.

Triangle Publications, therefore, would be seriously affected if the extended hours of operation were to be permitted. However, Triangle is not the only group affected by this proposal. American Broadcasting-Paramount Theatres, Inc., in whose behalf I am also

appearing here would suffer a substantial reduction in the service which they now provide to the public.

One of their stations which would be affected in WXYZ in Detroit, Mich., owned and operated by the American Broadcasting-Paramount Theatres, Inc.

WXYZ operates on 1,270 kilocycles with a power of 5,000 watts and employs a directional antenna at night. Under the present rules, at 1 minute after sunset when the daytime stations have gone off the air, WXYZ provides service to its 0.79 millivolts per meter contour serving a population of 3,340,000. If the daytime stations remained on the air, WXYZ would serve only to the 6.4 millivolts per meter contour and under these conditions, it would serve a population of 2,475,000, or a loss of 26 percent. What is more, the present service area of 3,160 square miles would be reduced to 552 square miles, a loss of 82.5 percent in service area.

Radio station WXYZ would therefore suffer serious loss of service under the proposed extension of operating time.

This proposed legislation would not only be harmful to Triangle and American Broadcasting-Paramount Theatres, Inc., but all of the presently operating full-time stations would feel its effect. Let us consider examples selected at random from those so affected.

WISH, in Indianapolis, Ind., operates on a frequency of 1,310 kilocycles with a power of 5,000 watts. At 6 p.m. central standard time in March the present limit to WISH as a result of the operation of other stations on the channel is to the 9.8 millivolts per meter contour, serving 290 square miles and including a population of 472,000. If the daytime broadcasters were to continue operating with their daytime facilities until 6 p.m., the limit would be increased to the 16.9 millivolts per meter contour reducing the service area to 153 square miles and the population served to 354,000. This would be a loss in population served to 25 percent and an area of 27 percent. In December, owing to the earlier sunset time, at 6 p.m. central standard time, the present limit is 5 millivolts per meter. This serves 588 square miles and includes a population of 527,000. Should the daytime stations remain on the air, the limit would be increased to 32 millivolts per meter; the area served would be reduced to 68 square miles and the population to 113,000. This would be a loss in area served of 94 percent and a loss in population of 78 percent.

This loss of service to presently operating fulltime stations is not restricted to one section of the country, but occurs throughout the entire United States. For example, in New Haven, Conn., WELI which operates on 960 kilocycles now serves a population of 270,400 in an area of 216 square miles. If the daytime stations were to continue to operate after the sunset period, there would be a loss in population of 98,800, or 37 percent of the population now served, and a loss in area served of 174 square miles, or 80 percent of the area served would be lost.

In Houston, Tex., KPRC operates on a frequency of 950 kilocycles. Its present nighttime service encompasses an area of 11,800 square miles and includes a population of 1,079,587. Operation of the daytime stations as proposed would result in a loss of population of 392,154, 36 percent of the present population served, and a loss in area of 10,846 square miles, 92 percent of the present area served.

In Long Beach, Calif., KFOX on a frequency of 1280 kilocycles presently serves 2,244,000 people at night within an area of 1,041 square miles. Operation of the daytime stations as proposed would result in a loss of service to 2,075,000 or 93 percent of the present population served. There would be a loss in area of 888 square miles or 85 percent of the present area served.

The case of those stations known as clear channel stations is even more striking. These stations operate with a power of 50,000 watts and are intended to provide wide area coverage so that service will be provided, insofar as possible, to sparsely populated areas of the country where it is not feasible to profitably operate a radio station.

Considering the primary service only of a clear channel station, that is to say, the service that is calculated on the basis of ground wave propagation, KOA, Denver, Colo., on 850 kilocycles now serves a population of 1,613,000 within its primary service contour. If the daytime stations operated as contemplated, there would be a loss in population served of 748,000 amounting to 46 percent of the population now served. The area served would be reduced from 200,320 square miles to 26,300 square miles, a loss of 87 percent.

The secondary coverage of KOA which is depended upon to bring nighttime service to a large area in the Rocky Mountain States would be entirely destroyed while the daytime stations are on the air.

In Atlanta, Ga., WSB on 750 k.c. provides radio service to 1,366,803 within an area of 321,796 square miles. With the daytime stations operating at night there would be a loss in population served of 744,920 or 55 percent. The area covered by the interference free contour would be reduced by 19,243 square miles, or a loss of 6 percent.

It must also be kept in mind that in imposing this loss in service upon these full-time stations, the daytime stations who have continued operation would suffer a similar loss in their area and population served, so that instead of providing a real additional service to the public, there would be an overall loss of service of considerable magnitude.

Take, for example, WTRN in Tyrone, Pa., operating on a frequency of 1290 k.c. with a power of 1,000 watts daytime only. This is one of the stations which would contribute to the interference created to WNBF in Binghamton. During daytime hours, service is provided to approximately the 0.5 mv./m. contour. This contour includes an area of 900 square miles in which reside a population of 68,000. Operation of WTRN after sunset results in a limitation to the 22 mv./m. contour and this would provide interference free service to but 36.2 square miles. This area contains a population of 10,333.

Other daytime stations would be affected similarly. For example, WVMI, in Biloxi, Miss., on 570 k.c. serves during the daytime 313,497 in an area of 7,210 square miles. After sunset, due to the existence of skywave interference, this population would be reduced to 36,053, or 12 percent of those presently served. The area served would be reduced to 64 square miles or less than 1 percent of the area served during the daytime hours.

WCPS in Tarboro, N.C., operating on 760 k.c., serves a population of 217,122 within an area of 2,922 square miles during the daytime. At night, even during favorable conditions of sunrise and sunset, the coverage would be reduced to 14,300 or 7 percent of the present popu-

lation served. The area within the interference free contour would be reduced to 99 square miles, or 3 percent of the area served during the day.

WUST in Bethesda, Md., on 1120 k.c., includes 826,419 within its service area during the day, the area including 716 square miles. During the proposed additional hours of operation of the daytime stations, even under favorable conditions of sunrise and sunset, this population would be reduced to 38,194, less than 5 percent of the population served during the day. At the same time, the interference free area would be reduced to 21 square miles, or 3 percent of the present area.

This loss to all stations is real, not imaginary, and it can be calculated or predicted with a high degree of accuracy. The cities in which the daytime broadcasters operate will be deprived of service after sunset, not because of a requirement that they cease transmitting at this time but because of the natural laws of radio wave propagation. Authorizing a daytime station to leave the switch turned on beyond the sunset period will not and cannot give that station interference free service, and it will certainly destroy the interference free service of the present fulltime stations on the channel.

I have attached to the statement a summary of all the stations which I discussed in this document.

That concludes my statement, Mr. Chairman.

The CHAIRMAN. Thank you very much.

You had certain exhibits with your statement that you wanted to include with the statement?

Dr. KEAR. They were part of the statement, sir. I just read excerpts therefrom.

The CHAIRMAN. But I noticed a summary of full-time stations and daytime stations. Is that the one you referred to?

Dr. KEAR. And that is also discussed in detail in the text.

The CHAIRMAN. It will be included with your statement.

Dr. KEAR. Thank you.

(The summary referred to follows:)

Summary

FULL-TIME STATIONS

Frequency	Station	Location	Percent of present service lost	
			Area	Population
KILOCYCLES				
1290	WNBF	Binghamton, N.Y.	80	21
940	KFRE	Fresno, Calif.	35	16
560	WFIL	Philadelphia, Pa.:		
		Summer	17	5
		Winter	34	6
1270	WXYZ	Detroit, Mich.	82.5	26
1310	WISH	Indianapolis, Ind.:		
		Spring	27	25
		Winter	94	78
960	WELI	New Haven, Conn.	80	37
950	KPRC	Houston, Tex.	92	36
1280	KFOX	Long Beach, Calif.	85	93
850	KOA	Denver, Colo.:		
		Primary	87	46
		Secondary	100	100
750	WSB	Atlanta, Ga.	6	55

Summary—Continued

DAYTIME STATIONS

1290	WTRN	Tyrone, Pa.	96	85
570	WVMI	Biloxi, Miss.	99	88
760	WCPS	Tarboro, N.C.	97	93
1120	WUST	Bethesda, Md.	97	95

The CHAIRMAN. Mr. Younger, any questions?

Mr. YOUNGER. Mr. Kear, these examples you give on the loss of the signal—is that real in the sense that you have had both stations on at the same time and recorded them, or is that just an engineering calculation of what might happen if they were on or off?

Dr. KEAR. That is a calculation based on measurements which have been made to determine the propagation conditions which exist.

Mr. YOUNGER. I ask you the same question: Is there any reason why you could not take one of these areas, or some area that would be agreed upon, and allow the daytime station to transmit from 6 a.m. to 6 p.m. and by actual tests of the people receiving the signals find out what the interference is?

Dr. KEAR. No reason at all, sir.

Mr. YOUNGER. Would not that be the best way to reach a solution to this problem?

Dr. KEAR. It might be the quickest.

Mr. YOUNGER. Well, would it not be more real, rather than by calculating what it might be?

Dr. KEAR. It is more readily understandable to the general public.

Mr. YOUNGER. For after all, what we are trying to do is to serve the general public. We are not interested in the mathematical calculations of what the waves might do. We are concerned with what may actually happen.

Dr. KEAR. That is right.

Mr. YOUNGER. And I know of no way of testing it unless you actually make a test of that kind in an area with the stations operating and then find out as to the receiving public.

Dr. KEAR. As I say, I think that might be the quickest way of convincing everyone of either the validity or nonvalidity of the engineering studies which have been made throughout the years.

The CHAIRMAN. Mr. Avery?

Mr. AVERY. I do not have a question.

I just wanted to comment, Mr. Kear. It seemed to me that the examples you give suggest an obvious void in the pattern. If these stations were compelled to yield to daytime stations an hour or an hour and a half, their reception area would be reduced 82 percent and their listeners by a comparable number, whatever the case may be. But you failed to take into account the extra service that those people might be getting from the daytime stations continuing on the air.

Dr. KEAR. Well, I endeavored to show that in my complete analysis, sir, by indicating the extent to which the daytime stations would provide service at the same time. As to the second group of stations, I only listed one, but I have listed four on the last page of my statement.

Mr. AVERY. You are assuming that that is the only daytime station that might be on in lieu of the reduced power?

Dr. KEAR. No. Of course, the only way to give a complete answer—I know what you have in mind, sir: Supposing station XYZ loses

100,000 people. Then all the other daytimers on the air would serve a comparable number of people. I have not a sufficiently complete analysis to be able to give you an analysis of that.

Mr. AVERY. That is all, Mr. Chairman.

The CHAIRMAN. Dr. Kear, you were stating at the outset that you are testifying on behalf of Triangle Publications and also American Broadcasting-Paramount Theatres, Inc. I have a wire from Mr. Leonard Goldenson, advising me that you, as a consulting engineer here in Washington, would be testifying for the American Broadcasting Co. I wanted to note that for the record.

Thank you very much for your testimony.

Dr. KEAR. Thank you, sir.

The CHAIRMAN. Following Dr. Kear's statement, we have a letter from Mr. Leon R. Brooks, a letter transmitting a statement of Mr. Arthur Hull Hayes, president of CBS Radio, with reference to these proposals, requesting that the statement be included in the record. That will be included at this point.

(The statement referred to follows:)

STATEMENT OF ARTHUR HULL HAYES, PRESIDENT, CBS RADIO

CBS Radio understands that your subcommittee has scheduled hearings for June 13 through June 15, 1960, on five bills (H.R. 6676, 6868, 8286, 9627, and 10275) which would amend the Communications Act of 1934 so as to provide that broadcasting stations licensed to operate during daylight hours may operate at least from 6 a.m. to 6 p.m. The purpose of this statement is to advise your subcommittee as to the views of CBS Radio with regard to these bills. We request that it be incorporated in and made a part of the record of the hearings on the bills.

In our view, the enactment of these bills into law would adversely affect the public and for that reason we oppose their passage.

Within the last year the Federal Communications Commission, on the basis of an exhaustive inquiry into the matter, decided that rulemaking on the question of 6-to-6 operation by daytime-only stations was not warranted. We concur in that decision.

The public would be adversely affected by the passage of these bills because, should daytime-only stations operate earlier than sunrise or later than sunset, those stations would during predawn and postsunset hours cause chaotic interference with unlimited time stations on the same frequencies. That interference would destroy existing radio service over wide areas. Additionally, daytime-only stations, if operating other than during the daylight hours, would receive such interference from the unlimited time stations that they could be heard by only a fraction of those who can receive their signals in the daytime. The result is a huge net loss in radio service.

Fundamentally, the problem is one of engineering. To make this clear, we would like to summarize briefly the basic characteristics of radio transmissions. Radio signals in the standard broadcast band are generally transmitted in the daytime by what is known as groundwave, which closely follows the earth's surface. At night, in addition to groundwave transmission, radio signals are propagated by what is called skywave. Basically, skywave tarnsmission consists of radio waves traveling upward and outward from the transmitter to an electrified layer called the ionosphere, from which they are reflected back to earth at distances substantially greater than the reach of groundwave signals. These skywave signals render a useful and frequently exclusive service over wide areas. In fact, skywave signals are the only standard broadcast services available to large areas of the United States at night; indeed, in some areas, nighttime skywave service is the only service available, day or night.

Because radio signals can objectionably interfere with transmissions on the same frequency at a distance far beyond the maximum distance at which such signals are usable, the Federal Communications Commission has for over 30 years designated certain frequencies for higher powered stations whose signals are protected to a relatively high degree from interference by stations assigned

to the same or adjacent channels. This protection enables these stations to be received over wide areas.

The interference problem between stations on the same frequency becomes critical as sunset approaches, because the appearance and disappearance of skywave transmission is not an instantaneous phenomenon. During midday, skywave transmission—both as a usable service and as a source of interference—has a threshold value of approximately one one-hundredth the nighttime value; it starts to build up progressively at about 2 hours before sunset and reaches its approximate maximum at about 2 hours after sunset. Engineering studies show that by sunset the intereference problem has become quite severe. Conversely, skywave transmission begins to deteriorate at about 2 hours before sunrise and, for all practical purposes, reaches its minimum by 2 hours after sunrise.

The severe interference problem after sunset is recognized by various provisions of the rules and regulations of the Federal Communications Commission. For example, on certain frequencies stations are required to use directional antennas at night. By using such antennas these stations suppress radiation toward other stations on the channel and thus cut down mutual interference. On some other frequencies, certain stations are required to discontinue operation at night. In this connection, it should be borne in mind that the majority of daytime-only stations are on frequencies where full-time operation is permitted. They are daytime-only stations either because they cannot or do not choose to protect the signals of unlimited time stations on these frequencies by the use of directional antennas.

The report of the Federal Communications Commission dated July 8, 1959, in which it was announced that rulemaking on 6-to-6 operation by daytime-only stations was not warranted, was the outgrowth of an earlier proceeding in which comments had been requested on a proposal to authorize daytime-only stations to operate from 5 a.m. to 7 p.m. as a minimum. Approximately 350 parties filed comments in that proceeding, and, when the Federal Communications Commission concluded that such operation would not serve the public interest, the Daytime Broadcasters Association—a group of some 150 daytime-only stations—requested that the Federal Communications Commission authorize daytime-only stations to operate from 6 a.m. to 6 p.m. as a minimum. In response to that request the Federal Communications Commission, on January 12, 1959, issued a notice of inquiry into the advisability of such a 6-to-6 operation by daytime-only stations.

The Federal Communications Commission, on the basic of is careful review of the comments filed in response to its notice of inquiry and its reexamination of its decision in the "5 to 7" rulemaking, terminated its inquiry. There were several reasons which compelled it to do so:

1. "* * * if all present daytime stations were to extend their hours of operation from 6 a.m. to 6 p.m. there would be substantial losses of existing groundwave services, new white areas [areas without radio service] would be created in the vicinity of the communities which are now served by unlimited time stations on the same frequencies, the resulting service areas of the daytime stations would be meager, and skywave service would be lost. While the losses would be most severe in rural and small urban communities, a substantial number of regional stations would not even serve the entire community to which they are licensed." (Report par, 7, docket No. 12729.)

2. "Data currently available are necessarily confined to interference resulting from the operation of existing stations. The prospective effects are necessarily somewhat speculative. The ratio of increase of daytime stations and applications clearly shows a strong continued demand and in addition the eventual lifting of the freeze [applications for new or changed facilities on certain frequencies have been "frozen" during the examination by the Federal Communications Commission of the possibility of the more efficient use of these frequencies] will undoubtedly accelerate the filing of daytime applications. It thus appears, based on present licensing and reasonable expectancy of future development, that until 9 p.m., eastern standard time, all skywave service would be entirely destroyed and groundwave service severely limited on most of the 107 standard broadcast channels. (Only the six local channels would be unaffected.)" (Report par. 9, docket No. 12729.)

3. "* * * we conclude that the losses of standard broadcast radio service, both groundwave and skywave in the various areas affected, which would

result from an extension of the hours of operation of stations licensed for daytime operation must be determinative herein. We are unable to find an expression of any local need which is impossible of substantial fulfillment under existing rules for station licensing and which is so great or so pressing as to warrant widespread disruption of the existing radio service now enjoyed thereunder and relied upon daily by millions of citizens. Particularly, would it be undesirable and unwarranted to permit such disruption in those instances where the result as shown by the data would simply be the taking of regular service from rural farm areas and from small urban communities, which need radio vitally, and giving more stations—serving less area—to city and principal urban areas which are already relatively well supplied not only with standard broadcast radio programs but with other facilities for relaxation, intelectual stimulus, information, and recreation. Moreover, this conclusion is strongly reinforced by a comparison of the 1,761,622 persons in 357 communities, now receiving only skywave service, who would gain in lieu thereof a local groundwave service, with the 25,631,000 persons in 1,727,000 square miles, now receiving skywave service, who would lose entirely the standard broadcast radio service now available to them." (Report par. 19, docket No. 12729.)

These reasons all relate to service and interference. But there were other reasons which militated against further consideration of extended operating hours for daytime-only stations. For example, to authorize daytime-only stations to operate other than during daylight hours—and thus take away service because of the interference they would cause—would necessarily hamstring the Federal Communications Commission in its examination of the possibility of adding service by additional full-time assignments on certain frequencies.

Another reason precluding "6 to 6" operation by daytime only stations is that this country has recently ratified the North American Regional Broadcasting Agreement, and the United States-Mexico agreement signed on January 1, 1957. Both of these agreements were the result of long negotiations with the other countries concerned and both are necessary to avoid destructive interference among broadcast stations in the North American Continent. Under these agreements, each country is given priority on certain clear-channel frequencies. And each of these agreements precludes operation other than during daylight hours of stations assigned to clear-channel frequencies on which other countries have priority. Thus, insofar as they pertain to stations in this country which are assigned to clear channels on which other countries have priority, the bills before your subcommittee are in conflict with international agreements which are vital to an orderly use of the standard broadcast band. The Commission's view of this aspect of the matter was clearly stated in its report and order in docket No. 12274:

"We question whether under any circumstances we could appropriately undertake a change in our allocation policies so seriously inconsistent with international understandings which would jeopardize the framework of mutual protection throughout the continent. We are not impelled to take such a serious step here" (par. 44).

Thus, on the basis of a most complete record, the Commission, carrying out its responsibilities and in the exercise of its expertise in such matters, has concluded that the public interest would not be served by extending the operating hours of daytime only stations.

In sum, we oppose these bills for the same reasons which the Federal Communications Commission gave in concluding that rulemaking was not warranted on "6 to 6" operation by daytime only stations:

(*a*) The population which would gain service would be vastly exceeded by the population which would lose the service of existing stations;

(*b*) Operation of daytime stations as proposed would create extensive "white areas" in which the population would lose all nighttime primary service, while the daytime stations themselves would generally serve only a very small fraction of the areas and populations which they serve during daytime hours;

(*c*) On virtually all the clear channels all skywave service would be destroyed if daytime stations were authorized to operate as proposed; and

(*d*) Severe interference, inconsistent with international understandings, would result to foreign stations under such operation.

This is not a case in which an administrative agency refused to consider an important problem. Nor is it a matter of broad public policy not hinging in large part on technical considerations. On the contrary, it is a matter within

the special competence of the Federal Communications Commission's technical expertness. A thorough examination was conducted by the Federal Communications Commission and, on the basis of substantial engineering and other pertinent data, that agency concluded that rulemaking was not warranted on "6 to 6" operation by daytime only stations. We urge that your subcommittee not disturb that conclusion.

For all these reasons, CBS radio urges that your subcommittee report these bills unfavorably.

The CHAIRMAN. Mr. Howard Miller.

Mr. Miller, will you identify yourself for the record, please, sir?

STATEMENT OF HOWARD O. MILLER, OAKLAND, ILL.

Mr. MILLER. Mr. Chairman and gentlemen of the committee, my name is Howard O. Miller, and I reside on a farm near Oakland, Ill. I am more or less retired from the farm and have served as the farm program director at radio station WLBH in Mattoon since September 1953. I might add that is about 25 air miles from my home.

I was born in Pulaski County, near Somerset, Ky., in March 1900. My parents moved to Illinois when I was just 6 months old, so I do not remember very much about living in Kentucky. I went to grade and high school near Mattoon, graduating from the Arcola High School about 15 miles north of Mattoon, back in 1919. My father was a farmer, so I grew up on the farm and I have lived on the farm all my life. I was married to an Arcola girl back in 1923 and to us were born three fine children, two sons and a daughter. My son, Fred, graduated from the University of Illinois College of Agriculture, and both my sons are now actively running our farm over by Oakland, Ill.

For several years now I have raised and bred Black Angus purebred cattle and won some pretty high awards at various cattle shows around over the country. At the present time I farm about 630 acres with my sons.

I have been active in the Oakland Lions Club in Oakland, Ill. I helped to organize and still help every year with putting on the Oakland Cornbread and Bean Festival. This little community of 1,000 population entertains some 25,000 people every September, the first Wednesday after Labor Day. I was general chairman of the event one year about 10 years ago. I also served for 32 years on various school boards and 10 of those 32 years I served as president of the board.

Two years ago, back in June of 1958, to be exact the 7th of June, I liked the idea of helping to improve relations between the people of Russia and the United States, so as farm director at WLBH, I organized a group of people to go on a farm tour of Russia. We were gone about 3 weeks and spent about 12 days inside Russia. Since I returned, I have given programs before more than 100 civic groups and organizations totaling several thousand people. After visiting Russia, our group was convinced that a farmer is a lot better off here in the United States of America than a farmer in Russia.

I also attend the International Livestock Exposition in Chicago every fall and have for many years, even back before I started working at WLBH. My children were all active in 4–H Club work when they were growing up, and I have always pushed 4–H Club efforts because I believe it helps to bring up our youngsters in the right way.

I had always thought that the American farmer was under a lot of Government control and regulation, but I guess it is really nothing compared to a radio broadcaster. Back 10 and 15 years ago, before I started working as a farm broadcaster, in 1953, I just thought perhaps these stations, which did not sign on until sunup and signed off at sundown, either could not afford to do otherwise or just did not want to.

While I was more active in the day-to-day chores around the farm, it always irritated me that I could not hear certain stations in the local area during the winter months while I was eating breakfast. They signed off late in the afternoon, before I got in from doing my chores, so naturally I could not hear them at night, either. I could never and still cannot understand why that people here in Washington should permit this kind of discrimination to exist. Actually, under the present situation, the fading, skipping skywaves or whatever they are, render such poor service that we usually have to look at television instead.

Maybe these Government engineers have all the answers and know what we should be listening to out in the prairies of Illinois; but, they should come out and try to get a decent signal to listen to right after sundown after our local daytime stations have signed off that skips in from 500 or 1,000 miles away. On the farm we can always lead the horse to water but we cannot make him drink. I guess the same things goes for radio listening. They can tell us what we should be listening to, but the farmers in Illinois are not interested in the "going-home" traffic jam on the outerdrive from a helicopter at sundown over clear channel WGN, and the farmers are not interested in "the new WLS" which since May 1 is devoting most of their time to spinning the top tunes and talking so fast you cannot understand what they are saying.

In Coles County, we are located in a very heavy agricultural area. It is in the agricultural belt of the Midwest where today our farmland prices range from $400 to $700 per acre. Our rich soil of east-central Illinois is one of our Nation's greatest resources. About one-fourth of the population of Coles County live on farms or rural communities. Our farms in Coles County produce a total of approximately $21 million annually, in grain, livestock, and produce. The standard of living in the farm homes of our area is high, with all of them served with rural electricity, and the homes are almost all modern, with all the conveniences of bathrooms, telephones, automobiles, and the like. Farming is a very important part of our overall economy.

As farm director at WLBH, I do most of my farm programing between 6 and 7 a.m., at noon, and again between 5 and 6 p.m.

And I might add for the record here we do give a close on the grain market at 5:35 each evening and a résumé of the livestock situation in Chicago, St. Louis, and Indianapolis.

Now, naturally, these are the best times to reach our farm people. But during the months of November, December, January, and February, I lose the privilege of serving our farm people during the early morning and at afternoon period. I can serve them only at noon. At WLBH our entire 6 to 7 a.m. broadcasting is directed to the farm people. We have a 15-minute newscast at 6 a.m., and then at 6:15

a.m., I do a quarter-hour farm feature that is usually a tape recording made with some farmer in our broadcast area explaining how he is doing something on the farm. Or it might be with a livestock farmer that has done an outstanding job with cattle, hogs, or sheep.

My two sons built a "pig motel" on our farm near Oakland, and we have had people from all parts of the Midwest come in to see and learn what they are doing. We had a couple of these 6:15 morning broadcasts explaining this "pig motel," which was put up in 1959. I might add that we feed out about 2,000 hogs, here.

I would like to add about our direct buying today: Many people do not realize, but we have our Chicago and St. Louis and Indianapolis markets. Very few people realize that our hogs are sold direct today. However, we do depend upon the terminal markets for the market price. That is, these boys that buy from what we call direct buying—we have two of them in our own county there in Coles County and Mattoon and Charleston, and it is very important, of course, that the farmers get this news early in the morning, so that they will know whether to sell their livestock that day or to hold it for another day.

Then at 6:30 to 6:45, we have some country and western music followed by a 10-minute livestock broadcast for that day. I might say we cover the St. Louis and Indianapolis markets at that time, because we are more or less a hub of the three terminals.

Then at 6:55 a.m., we have a 5-minute weather summary, which is very important for the farmer in planning his farmwork for the day. You can see that all this hour of programing is directed to the farm audience and when we lose that, the people really miss the service.

Then during this past winter we had to give a lot of school bus information due to the heavy snows, that we had in March. People really depend upon their local station, but it sure makes them mad when you fellows here in Washington regulate it so a lot of these local stations are not permitted to operate except on short, restricted hours during the winter months.

Naturally, being a farmer, I am not smart enough to tell you what to do, but I do know that something should be done to remedy the situation—and the sooner the better.

The CHAIRMAN. Thank you, Mr. Miller.

I assume you are supporting the bill?

Mr. MILLER. I beg your pardon?

The CHAIRMAN. I assume you are supporting these bills.

Mr. MILLER. You are correct.

The CHAIRMAN. Well, just take a seat back here. We are not quite through with you yet.

Mr. MILLER. OK. We will answer in our own way if we can.

The CHAIRMAN. Yes, sir. I am sure you can, with your experience that you have, and in view of your interesting testimony before the committee on the subject.

How long have you worked for WLBH?

Mr. MILLER. It will be 7 years this fall, sir. I started in 1953.

The CHAIRMAN. How long has WLBH been on the air?

Mr. MILLER. How long have they been on the air?

The CHAIRMAN. Yes.

Mr. MILLER. I believe it is 12 years or possibly going into the 13th year, if my memory serves me correctly.

Mr. Livesay could answer that; 14 years, he says.

The CHAIRMAN. I have a great deal of sympathy with the statement about the people wondering why these folks in Washington are telling them what to do. In many things I sympathize and share views regarding such matters. But you do not try to imply here, do you, Mr. Miller, that there should be no regulation of the communications industry, the broadcasting industry, the natural resource used for that service; do you?

Mr. MILLER. No, sir.

The CHAIRMAN. Then you do not imply that any of the people in your community would suggest that we not have some order out of the chaos that resulted back at the beginning of the Radio Act of 1927, do you?

Mr. MILLER. No, sir.

The CHAIRMAN. Well, I wonder if this fine, important, well-run, and highly successful station, with great personnel and such an important farm director as you—I wonder if they did not know that was the rule when they made an application for the operation of this station in Mattoon, Ill.

Mr. MILLER. I imagine Mr. Livesay knew about that.

The CHAIRMAN. That was the rule at the time, and so an application was made. And it was understood that the rules were from sunup to sundown operation. That was pretty well understood by everybody, was it not?

Mr. MILLER. Well, you know, we people out on a farm actually, until I started working at the radio station—I did not know Mr. Livesay, until he testified here, and he had told me before—I did not know he was illegally on the air 4 years there, until he told me about it. And I did not know Mr. Livesay at that time. But I could still hear him up at Oakland, Ill.

Mr. MILLER. Yes; and does he not say every evening when he signs off that it is sundown, a certain time, and under the authority of the Communications Commission?

Mr. MILLER. That is right.

The CHAIRMAN. That this station is now going off the air?

Mr. MILLER. You are right.

The CHAIRMAN. And therefore he advises, then, everybody, including you, and has all these years, that he did have to go off, under the authority of the Communications Commission?

Mr. MILLER. But he did not come on the air, though——

The point I am trying to make, Mr. Chairman, is that if he came on the air and said, "I am on here at 6 o'clock in the morning," and he did not tell me why—I was just listening in, you know. I am just an old farmer. I am still a farmer, for that matter.

The CHAIRMAN. I have great sympathy for you, because I am a farm boy myself. I was born and raised on the farm. I do not think that we had quite the high priced and productive land that you have, you and your farmers up there. But I know what farm life is, and as a matter of fact, I enjoy it. I think every boy that has not had something of a farm life has missed something, in this country.

Mr. MILLER. I agree.

The CHAIRMAN. And I share your observation about the Russian farmer. I was there myself with the committee in 1955. We went out on the farms and visited with the farmers. I think the American

farmer, when he can get along—unfortunately, more and more of them are having to leave the farm down in my part of the country—but otherwise, when they can live and get along on the farm, I think they have the greatest living of any people in the country.

Mr. MILLER. I will agree with you.

The CHAIRMAN. That is the way I feel about it. But I did not feel that you should give the impression here that the people out on the farm were just of such a nature that they thought there should be no Communications Commission, that there should be no regulation, that there should be no order in this business. It is necessary to have some order, or people cannot get any service at all. We all know that.

Mr. MILLER. I will agree with you, Mr. Chairman. I would like to say this, though: that I think the most important months of farming, and in our condition especially this year, I do not know how you have been here in Washington or down at your home, but through the month of March we had the heaviest snow storms. And I just wish somebody could have been at the radio station when the different superintendents were calling in wanting to know if they were going to have school today or going to have this or that.

Like I said here in the closing of my testimony, I do not know what the answer is.

The CHAIRMAN. Well, I am really sympathetic with that. Why, up there on the farm where I was raised, where my sister lives now, and the family, they have young children there in the first and second grade, and since they imposed daylight saving time on these people out in the country they have to get up before daylight in order to get to school.

Mr. MILLER. Really? Of course, our bus routes start at 7 o'clock in the morning. So if we are not on the air, though, naturally, you can see the service that we could render to our people.

No, I do not want to be misunderstood, here, that I have come over here to tell you even how you should run the business. We realize we have to be regulated. We know we have to be regulated. It is like your own family. If you did not regulate your own children, after a while they would take over. We appreciate the effort here that is being done. All we hope is that you be sympathetic toward the things that we are telling you here, and give us a chance.

I think this trial system is proof positive. If you give the people a chance in America here to prove out for themselves the thing we are talking about here, I am particularly interested in this thing, myself, and especially these hearings and the questions that Mr. Avery and Mr. Younger and the other gentlemen have asked, along with you. I think it is wonderful, because in Russia we could not do this. You were in Russia. You know, over there they just have one station, and brother, you turn that dial off and you have had it, because you do not listen to anybody else. We do not want that thing here in America, naturally.

But I do think there are ways and means here in America that we have always solved our problems, and I am quite sure you gentlemen will come up with the right answer.

The CHAIRMAN. Mr. Younger?

Mr. YOUNGER. Undoubtedly you people are interested, and you are interested in having your people get a good signal?

Mr. MILLER. Naturally. That is right.

Mr. YOUNGER. If there is interference after sundown, and your people could not get a good signal either from the daytime station or the clear stations, you would want it cleared up?

Mr. MILLER. You are absolutely right, sir.

Mr. YOUNGER. The only way we can do it is test it out, in my opinion, to find out.

Mr. MILLER. I think you are on the right track.

Mr. AVERY. I did not have any questions. I had several comments.

When I saw your name on the witness list, Mr. Miller, I looked around over the room very quickly, because I had a man run against me twice by the name of Howard Miller.

Mr. MILLER. I beg your pardon. I did not know that. You know, we move pretty fast out in the country. To be honest, I am on the air seven times a day, and if you do not believe it, you get a sponsor and treat your sponsor right, and you come on the 12:10 market at noon, and you have 4½ minutes to do that in, and you give your sponsor, and then you give the broadcast of the grain markets and Chicago, Indianapolis, and St. Louis, and you have got to talk fast.

Mr. AVERY. Let me tell you further that I am a farmer. I still live on the farm. And that is basically my concern about this whole matter, because I know from firsthand knowledge how much a farmer does rely on his local radio stations, particularly for market and weather service. News and entertainment, of course, are supplemental to that, but primarily for weather and market service, we do depend on our radios almost exclusively, because nowadays the paper comes too late.

With your permission, Mr. Chairman, I would like to ask Mr. Barr a question at this point.

Thank you, Mr. Miller.

The CHAIRMAN. Does the station you work for have a network affiliation?

The CHAIRMAN. Then there is no question of a commercial competitive situation within your little community where you operate between you and the station in Chicago or in the surrounding area?

Mr. MILLER. I do not know as I follow just exactly what you mean, Mr. Chairman.

The CHAIRMAN. I suppose your advertising comes generally from your little town or area?

Mr. MILLER. That is right. I would say within a 50-mile area of Mattoon.

The CHAIRMAN. I would not imagine many of those people in that area do much advertising in Chicago or these other places far off.

Mr. MILLER. Well, they have a Schlitz or a High Life, or something like that. But that is right locally. That is right.

The CHAIRMAN. But there could not be any really serious conflict, then, with reference to the market for the operation of stations?

Mr. MILLER. I think that is correct.

However, it is like Mr. Avery said, here. We are interested in farming. You are interested in farming. So what we want to do, if we possibly can, with the permission of you gentlemen, is to get out early in the morning, as the saying is. You know, make hay while the sun shines. We have to get that done early in the morn-

ing. And if we get this information out to the farmers about the weather and about the livestock conditions, it is important. I know.

The CHAIRMAN. Along with that, however important as it is, we have two considerations. We have this natural phenomenon to consider. We did have one engineer on this committee, one time. Unfortunately he passed away. I do not believe we have an engineer on the committee at this time. So we have to rely on all of you people who are engineers and who have experience in this field. We have that natural phenomenon problem to consider, and we also have the question of international treaties to consider.

But aside from that, what puts the spice in it is the competitive business, the service and advertising. I know that the business community of this country contends it depends on service and competition. And I hope it will always be that way.

Mr. MILLER. I will agree with you. And as a neighbor always told me one time: If you want to find out what kind a fellow really is, just get your hand in his pocketbook sometime.

The CHAIRMAN. Mr. Miller, thank you very much. We are glad to have you.

Mr. AVERY. There is a question that has been going through my mind in the last 2 days. Is there an exception made on daytime broadcast or schedules for an emergency such as Mr. Miller suggested here—a bad storm, a tornado, an emergency of some kind? Are they permitted to go back on the air or stay on the air longer?

Mr. BARR. We have a rule on the books which permits an operation in an emergency, yes. It has not ordinarily been construed as permitting them to come on the air in the morning, for instance, and make announcements, regarding whether the schools are open or closed. It is couched in terms of some danger, imminent or present danger to life or property.

In case of hurricanes, earthquakes, things of that sort, natural disasters, the stations are permitted to come on almost without restriction and participate in relief work or warnings and things of that sort. But it is generally tied in with some danger to life or property.

Sometimes a snowstorm gets close to that.

Mr. AVERY. Thank you, Mr. Barr. I did not want to detain the other witnesses, but I thought that statement ought to be in the record.

The CHAIRMAN. Mr. George J. Volger.

Mr. Volger, I observe that you are from Iowa. I also observe you have a pretty long statement, and I also observe that it is getting late.

STATEMENT OF GEORGE J. VOLGER, KWPC, MUSCATINE, IOWA

Mr. VOLGER. I think I can do this in roughly 20 minutes time.

My name is George J. Volger. I am partner and general manager of the Muscatine Broadcasting Co., operating daytime radio station KWPC, in Muscatine, Iowa. For over 22 years I have been in the field of radio broadcasting. Immediately after securing my postgraduate degree at the University of Southern California, in 1938, I was employed by the National Broadcasting Co., Hollywood, Calif., working in traffic, announcing, recording, and eventually becoming night program manager. After 7 years with NBC I then joined the program and talent agency of Art Rush, Inc., for 2 years, also in

California. In January 1947, my wife and I, as partners, started station KWPC, in Muscatine, our hometown.

The opportunity to appear before this Subcommittee on Communications is greatly appreciated, as I sincerely feel that radio can play an increasingly important role in thousands of American communities. Radios are operating in 97 percent of America's homes, with over 40 million sets now in automobiles. No other medium—broadcast or print—can match this coverage.

Unfortunately, many hundreds of communities are not securing the full value of their own local radio stations, due to the station's changing schedule, on a sunrise-to-sunset basis. KWPC is a daytime station, operating on a frequency of 860 kilocycles, with 250 watts of power. During the month of June we broadcast from 6 a.m. to 7:45 p.m., c.s.t., a total of 13½ hours daily. Within 6 months time, in December, we cut down our operation to 9 hours daily, not signing on the air until 7:30 a.m., and signing off at 4:30 in the afternoon, a total of 9 hours. It is well known in the retail business that it may take a year, or a couple of years, to have the public become adjusted to a basic change in store opening hours. Daytime radio stations must make this change in their opening and closing hours every month.

In our particular case, we program for 270 hours in December, expanding gradually to 405 hours in June. But a recital of general program hours means little. Let me translate this in program services. During our 6-month "decapitation" from summer to winter, it is necessary for us to cancel each week 26 newscasts, 12 market reports, 12 other farm programs—one a series from Iowa State University, and the other, a production of the county extension service, 6 religious programs must take a time change and 1 must be canceled, and 12 sportscasts are canceled.

In months of December and January, many businessmen and factory workers, with the deletion of early morning and late afternoon news, hear only the newscast at noon.

During the 3 months we sign off before 5 p.m., November through January, listeners can receive a full closing weather forecast only at noon. At this time of season, with its quick weather changes, a late weather forecast is extremely important, especially to rural families. There have been a number of times when schools have asked us to carry information about the cancellation of basketball road trips, due to sudden weather changes, but we have already signed off the air. The afternoon newspapers go to press by 2 p.m., so they are of no help in such a situation. Other radio stations would be happy to carry such a message, but in our area, I think the average listener would debate for some time about which station to contact.

I must admit that many times I am amazed by the strong loyalty that can be built by a radio station on such a changeable broadcasting pattern. Some of the people who don't like the idea of daytime stations receiving stabilized hours on at least a 6-to-6 basis point to the wide coverage of clear channel stations. Listening surveys have shown that KWPC in the Muscatine trade area will average 60 to 65 percent of the audience, with three other stations, having from 6 up to 17 percent. Four clear channel stations may be heard in the Muscatine trade area, but their total listenership adds up to approximately 8 percent.

One of the main reasons for the existence of any radio station is that of broadcasting information during an emergency. However, there evidently exists within the staff of the FCC a question as to what constitutes an emergency. This matter of interpretation seriously affects the decisions the manager of a daytime station might make in such a situation.

Section 2.405 of the Commission rules reads in part:

The licensee of any station, except amateur, may, during a period of emergency in which normal communication facilities are disrupted as a result of hurricane, flood, earthquake, or similar disaster, utilize such station for emergency communication service in communicating in a manner other than specified in the instrument of authorization * * *.

This has been a rough winter. Early in February we had conditions in the Midwest which made the oldtimers go back many years for comparisons.

On Tuesday afternoon, February 9, a very heavy snow started. Roads became very treacherous, and dozens of meetings were called off due to the terrible driving conditions. I authorized the announcer and engineer on duty to stay on the air until 5:37 p.m., 7 minutes beyond our regular signoff time to broadcast road conditions and meeting cancellations.

On Wednesday the storm had left many roads impassable. Our engineer had to walk 2 miles to the station and as result we did not sign on until 7:10 a.m. Our normal sign-on time in February is 7 a.m.

By the following day the storm had reached its real power. News and engineering personnel had made previous preparations to come out very early. They phoned me shortly before 6 a.m. saying all four telephone lines were ringing incessantly with people calling in school and road information and the majority asking about road conditions and whether of not schools would be open. The school buses in rural areas start their routes around 6 a.m.

I authorized the men to sign on at 6 a.m. rather than waiting until 7. For the next 2½ hours we handled hundreds of emergency announcements: Approximately 40 schools were closed. School buses canceled their schedules or revised their routes. All highways to Davenport, Iowa, where some 1,600 Muscatine men work were blocked by drifts. Local and area mail deliveries were canceled. Government offices and many businesses did not open their doors. Industries canceled certain shifts. Funerals and weddings were postponed. Hundreds of city and farm meetings were canceled.

In order to handle the special information all the commercial schedule was canceled until about 8:30 in the morning.

I notified the Commission on February 13 of our operation outside the hours of our license. In the letter I also repeated a section of a letter we had received from Mr. R. F. Hedemann superintendent of Columbus Community School District, Columbus Junction, Iowa, about 25 miles west of Muscatine. Mr. Hedemann wrote:

We appreciate the fine way in which your station has handled the school cancellations during our recent snow storm. We were wondering if there were any way in which we might be able to help get the station on the air at an earlier time on a year around basis, instead of a sunrise to sunset schedule. We would be glad to write letters to anyone who might have such influence and explain the need for earlier time on the air * * *."

The Commission answered my letter February 25, saying in part:

> The type of announcements described in your letter are not "emergency" announcements within the meaning of the Commission's rules governing emergency operation. You are cautioned that repeated operation before local sunrise and after local sunset under circumstances other than actual emergency conditions may reflect adversely on your qualifications as a radio broadcast licensee, and would be considered in connection with your next application for renewal of station license.

I'll admit I was completely dumbfounded. Members of my staff, after receiving many letters and verbal reactions praising the fine public service during the storm, were completely deflated. I was greatly concerned also, because I knew that if the same situation arose again, I would act in exactly the same manner.

After another letter from me, the Commission replied, saying it had not known the full magnitude of the situation, as my initial letter had not stated that some phone lines were down in adjacent Louisa County.

I should like to emphasize that at no time have any full-time stations, clear channel or otherwise, carried this detailed, emergency-type information for our area. It would be virtually impossible for them to do so—they would have all they could do to handle their own immediate area situation. The FCC also recognizes this; in a letter last April from Acting Secretary Ben Waple, he writes:

> The Commission is * * * aware that unlimited time stations in distant communities are often not in a position to render effective service under these conditions.

Many public officials contact us continually throughout the year for aid in various types of emergencies: stolen cars, to secure aid in fighting farm fires, blood donors, lost children, high water, weather bulletins, and dangerous road conditions. The great majority of these announcements could not be handled by other radio stations, the nearest being 30 miles away. Stabilized hours would enable us to render more service to these organizations. During 8 months of the year we can handle their requested announcements in early morning and late afternoon. It is difficult for them to work with, or understand, our fluctuating schedule.

Sergeant Latchaw, in charge of the regional Iowa Highway Patrol office, phoned us earlier this year, asking us to announce that Highway 6 had been closed off. We had just signed off the air—he had forgotten about our early signoff in February.

The independent businessman has been referred to as the backbone of our economy. However, I am certain that many of us are becoming increasingly concerned about the tendency of economic power being concentrated in fewer hands. I am just as certain that the great majority of congressional representatives wish to aid, within reason, the independent, small businessman. Basically, the average daytime radio station is in the small-business category.

For one-third of the year, the daytime station on a sunrise-to-sunset basis, is not able to meet the needs of the local advertiser. The local businessman is responsible, in most cases, for 90 percent or more of the revenue for daytime-only stations. However, he is very skeptical about sponsoring a newscast, weather program, sportscast, or farm program when he knows that program will not be broadcast for 2 to 4 months out of the year.

A 5-minute farm program at 6:40 a.m., for example, must be canceled for 4 months on KWPC, from November through February.

Our 15-minute 7 a.m. newscast is not available on KWPC in December and January. However, the problem from a sales standpoint is a bit more involved. Since our sign-on time is 7 a.m. the newscast has no preceding programing. As it is difficult to have the listener tune in precisely at 7a.m., the listernership and advertising value is affected—especially when the sign-on time is different for both the preceding and following months. This is the basic reason why many listeners wrote the Senate Select Committee on Small Business, expressing the great inconvenience of "tracking" their favorite radio stations all over the clock.

The changing sign-on time also prohibits listening during the year with the automatic clock radios, which have been sold in increasing numbers over the past few years.

The present system causes special difficulties in December. With most retail businesses wishing to advertise heavily for one of their busiest seasons, the daytime station has less available time on the air than at any other time of the year.

From the buiness standpoint, there is another aspect which I would like to discuss. Although it does not bear directly on the main purpose of these hearings, there is an important relationship. In most cities the major competitor for the advertising dollar is the local newspaper. While daytime stations are saddled with a very difficult broadcasting pattern, newspapers have the benefit of mailing subsidies amounting to millions of dollars a year. Under laws dating back to 1879 and 1885 newspapers receive the advantage of free within-county mailing when delivery is made by a rural carrier at a post office which does not have city or village carrier service.

If the post office has letter carrier service, the rural rate is only 1 cent per pound. Since 1926 the cost of handling free in-county mailing has nearly doubled, from $8 million to $15,600,000 annually. Periodicals make up less than 2 percent of volume of this free in-county handling—newspapers, 98 percent (pp. 42 and 43, Survey of Postal Rates, H. Doc. 381, Apr. 20, 1960). Second-class mail is receiving a subsidy from the Government amounting to $280 million annually, a subsidy amounting to just under $5 billion since 1926.

Daytime stations are asking for no subsidies. We are asking for a more logical arrangement of our operating schedules, which would result in our being able to broadcast on a minimum basis of 6 to 6.

At this hearing, it is highly probable that clear channel interests will again bring forward statements from the offices of national farm organizations, urging the protections of large service areas of clear channel and other high-power big city stations. It has been my experience, and that of many other daytime stations, that these statements are not borne out by their member groups in the field. Excerpts from letters include: From Eugene L. Heintz, Muscatine County extension director:

> When your station has to sign on later during the winter months, and we lose our program due to this late sign-on time, we feel that we have lost a real personal touch with our people. We are very much concerned that your station receive permission for a year-round early morning sign-on time. We feel that this would be a great benefit not only to our particular extension program, but to the people of the Muscatine listening area in general.

KWPC grants the extension office time for a 5-minute daily program between 6:15 and 6:30 a.m.; this time is not available November through February.

Gordon Day, president of the Muscatine County Farm Bureau, wrote us in 1958:

> * * * your early signoff time during the winter deprives many farmers of the opportunity to listen to your last newscast. Since our farmers are interested in the local as well as the national news your station provides, they naturally turn to their local radio station for such news coverage. I might point out that the reason they are deprived of this privilege is because most of them are out doing chores at the time you sign off.

The Pomona Grange is composed of representatives of nine subordinate granges. The grange master, C. Earl Smith of West Liberty, Iowa, wrote to KWPC in 1954, stating in part:

> Radio provides a very worthwhile and needed service to rural communities, particularly in the early morning and late evening. The so-called sunrise, sunset schedule obviously does not coincide with agricultural pursuits.

A farmer in Letts, Iowa, G. Earl Bailey, writes:

> It is impossible at the present time to arrange our schedule to fit yours when you keep changing the time. We are unable (in the winter months) to hear your programs in the mornings and evenings, which are really the most important to us, and so must be satisfied with your noon programs. We would appreciate hearing a closing market and weather report, late enough in the evening so the farmers would be in the house and hear. In this modern age, these things which were formerly for convenience only are a must in our changing business.

The president of the Louisa County Education Association, Agatha Littelle, representing a number of rural schools, wrote the FCC:

> When it is necessary to close school because of inclement weather, radio is a valuable announcement media—but in the dead of winter this sunrise to sundown restriction on time, is a definite handicap to this service.

Everett Hidlebaugh, principal of the Columbus Community High School in Columbus Junction, also wrote the Commission, asking if it would be possible for KWPC to have more broadcast time in the winter—

> to broadcast shcool emergency announcements such as school closings due to roads, whether, heating, or electricity failures. One clear channel station such as WHO, Des Moines, has too long a list to broadcast on stormy days. Announcements must be made by 7 a.m. for (the school) bus routes.

These, and many other letters, from county and city officials, civil defense units, civic and religious groups, have been sent directly to the FCC, or filed with the Commission through the Daytime Broadcasters Association.

In replying to interested parties, the Commission has advised that KWPC occupies a channel assigned to Canada, and since Muscatine is less than 650 miles from the border, must operate on the sunrise to sunset plan.

The Commission has also made the statement, that:

> Were all stations permitted to operate at night, no long-range skywave service would be rendered and the interference among the stations would make listening virtually intolerable, even at moderate distances from the stations.

The present House bills, requesting at least 6 a.m. to 6 p.m., would not bring a great change in additional time. In our case, the maximum change, in December, would add 1½ hours in the morning and the same in the afternoon. In the other 3 months primarily affected,

November, January, and February, the additional time requested is considerably less, averaging for all 4 months 1 hour and 15 minutes in morning hours, and 1 hour and 4 minutes in the late afternoon.

There are also operational experiences which have caused many of us to question just how intolerable this interference might be, if broadcasting took place outside of the present restricted schedule.

Due to a misinterpretation of section 3.87 of the Commission rules, which refers to program transmission prior to local sunrise, for two winters KWPC signed on the air 1 hour previous to designated time. This clause relates to a class II station signing on at sunrise time of the primary class I station, if the latter is in the eastern time zone—in this case, Toronto. Not one written or verbal complaint of interference came from one listener, or any other radio station.

Another specific incident of this nature was discussed by the special Senate Subcommittee on Daytime Radio Broadcasting in 1957. In this case an Illinois station was required to cease its presunrise operations by order of the Commission, despite the fact that for four previous winters its presunrise operations had resulted in no complaints of interference. The subcommittee stated that it appeared the Commission would permit the daytimer to continue presunrise operation if he secured approval of the dominant stations on the frequency. The committee, however, questioned the practice of allowing the discretion to rest solely with the dominant stations. Commissioner Craven intimated at that time, the committee reported, that perhaps the general policy of presunrise operation merited review.

It has been suggested by some in the broadcasting field that if daytime stations were not satisfied with their present schedules they should apply for and construct FM outlets, giving them unlimited time. We did this—in fact KWPC FM is one of the oldest FM stations in Iowa from a point of continuous service, having been on the air 12 years. This station broadcasts from 6 a.m. to 10:15 p.m. daily, duplicating while KWPC AM is on the air, and programing separately at all other times. There has been a considerable investment, including not only the equipment, but regular personnel and production costs. Although an audience has been built, it simply cannot compare with the AM listenership, and will not do so in our long-range estimates. Financially, our FM operation is not paying its way; we hope for a rosier future. Stabilized hours on the AM would greatly clarify the picture, making a more understandable operating schedule for both outlets.

Once again I wish to thank this committee for allowing me time to present these viewpoints. I hope that the information will be of some aid in your consideration of this problem confronting the daytime radio stations of this country.

If there are any questions from the committee in connection with any of these points, I would be more than happy to explain them at this time.

The CHAIRMAN. Mr. Younger, any questions?

Mr. YOUNGER. Just one.

You make a big point out of these emergency announcements. I question whether any hour, whether it is 5 o'clock or 6 o'clock, will obviate that question. To me, that is not a strong argument, because your emergency might exist at 7 o'clock or 6 o'clock, or whenever you have a definite closing time.

Mr. VOLGER. Yes. That is certainly true. I do feel, though, that the stabilized hours, whereby not only the listeners but the officials concerned would realize this, also, would rectify that situation to a very great degree.

Mr. YOUNGER. With that I thoroughly agree. But a fixed time so far as the listener is concerned is far more preferable than to have to wait every morning to find out when he can use his radio.

Mr. VOLGER. I would also like to make one point. Quite a bit was mentioned about FM yesterday. We are one of the oldest stations from Iowa from a point of continuous service of FM operation. We have had an FM operation for 12 years, now. However, in that period of time, the amount and the size of the audience shows no comparison whatsoever, and there is no doubt in my mind but what the stabilized hours, again, would very much help the FM situation.

At the present time, from the standpoint of economics, from the standpoint of building up listenership within the FM, it is very difficult to do on this basis, and the stabilized hours would help that situation, also.

We put quite an investment in our FM, regularly, with personnel, plus the original investment in the area of $17,000 to $20,000, and we did this primarily for local sports. We broadcast all the city council meetings in full on our FM. And it has served in many ways, but the audience cannot compare with the FM operation.

Mr. YOUNGER. That station does not have a time limit, does it?

Mr. VOLGER. It does not.

Mr. AVERY. How does an FM operation stabilize hours on AM?

Mr. VOLGER. We duplicate the FM schedule and the AM during the day; so therefore, the FM station in the evening also has a fluctuating sign-on operational schedule as the AM signs off—even though FM is on during the day.

Mr. AVERY. You have identical time schedules? Is that what you are saying?

Mr. VOLGER. No. During the AM schedule, we duplicate programing.

Mr. AVERY. They are identical for that period?

Mr. VOLGER. Right.

Mr. AVERY. As long as AM is on?

Mr. VOLGER. Right. Then we continue with the FM only after the AM signs off, until 10:15 p.m. in the evening.

Mr. AVERY. I have one more question.

You apparently are not assigned to a regional channel. Is that right?

Mr. VOLGER. We are on a frequency of 860 kilocycles, which is a main channel for Toronto, Canada. I believe it is CFRB.

Mr. AVERY. A main channel? Is that the same as a clear channel?

Mr. VOLGER. This is a clear channel. This is a clear channel operating out of Toronto.

Mr. AVERY. My question was based on that. Why did you not go on the air at 4 a.m., as other regional broadcasters do? The answer is that you are on a clear channel, and that permission only extends to regional channels?

Mr. VOLGER. Right.

The CHAIRMAN. I observe your comments with reference to your newspaper competitors. I myself have had no reaction from the news-

paper industry as to whether they are for or against this. Did you mean to indicate that the newspaper people were opposing you in this?

Mr. VOLGER. No, I did not. I do not believe that that is so much of a direct connection. I point this out more in relationships, in that the average radio station has as one of its main competitors the print media or the local newspaper. And I feel that the newspapers do get considerable help in subsidies through free in-county mailings and other very low rates. And I believe that this last post office survey showed the newspapers only contributing about 26 percent in subscription rates of the actual cost of distributing those papers by the Post Office Department.

I bring that out purely as a matter of economic competition.

The CHAIRMAN. Yes. Of course, you are given the right to operate this facility, which is a natural resource belonging to the public, and you are not charged anything for that right, either; are you?

Mr. VOLGER. That is right. That is correct.

The CHAIRMAN. I do not know that the point has any bearing on this issue here, but I just wondered if there were any newspaper people opposing this; if that was the purpose of it.

Mr. VOLGER. No, not specifically as such, unless they have broadcast interests that they feel might not benefit from such a bill.

The CHAIRMAN. Thank you very much.

Mr. VOLGER. Thank you very much. I appreciate your hearing me at this late hour.

The CHAIRMAN. Mr. Biggar?

Mr. COTTONE. Mr. Chairman, if you do not expect to hear any more witnesses after Mr. Biggar, would it serve your convenience for Mr. Watson, who is another farmer, to be heard at this time? He has a shorter statement. It depends on your schedule this evening.

The CHAIRMAN. I have three other witnesses here. I do not want to cut anybody off.

You gentlemen prevailed upon me to do this, and when you came to see me you said you would not take over a day. We have gone 2 days, using morning and afternoon, except for the interruptions, and you still want to go on. We have scheduled other out-of-town witnesses later on. I do not know what to do about it. I am fixing to quit this hearing in a minute, here. If we do not complete these hearings this week, I will say to you gentlemen: I do not know when you are going to get the bill considered, if you get it considered at all; because I have other things scheduled next week.

STATEMENT OF GEORGE C. BIGGAR, PRESIDENT-GENERAL MANAGER, DE KALB RADIO STUDIOS, INC., STATION WLBK, DE KALB, ILL.

Mr. BIGGAR. As major owner and general manager of station WLBK, a 500-watt daytime radio station in De Kalb, Ill., I greatly appreciate the privilege of appearing before the Subcommittee on Communications of the Interstate and Foreign Commerce Committee in behalf of the House resolutions to extend and make uniform the broadcasting hours of daytime stations from 6 a.m. to 6 p.m. throughout the year.

BACKGROUND OF WBLK

WLBK is owned and operated by De Kalb Radio Studios, Inc., and is licensed by the Federal Communications Commission to broadcast on the regional frequency of 1360 kilocycles from De Kalb, a city of over 18,000 population in De Kalb County with over 47,500 population, according to the latest census estimates. De Kalb is 60 miles straight west of Chicago in the center of a prosperous agricultural-industrial area.

WLBK's primary coverage within its 0.5 millivolt area—an area of approximately 30 miles from De Kalb—includes all of De Kalb County, most of Kane, and parts of Lee, Ogle, Winnebago, Boone, McHenry, Kendall, and La Salle Counties.

The station went on the air on December 7, 1947, owned and operated by a group of local stockholders. It was successful in building a large local area audience during its early years on the air but had only fair success from the business standpoint.

In 1953, the local stockholders sold out their interests in WLBK to a group of six new stockholders, headed by Arnold M. Fredericks, an investment banker of Wheaton, Ill., and your witness, George C. Biggar, who has been actively engaged in broadcasting since 1924.

Upon FCC approval, the new owners assumed operation on November 16, 1953, with your witness as president and general manager, and Mr. Fredericks as secretary-treasurer.

To enable WLBK to provide more efficient service to its area, approximately $40,000 was spent by the ownership between 1955 and 1959 to buy land and to construct a new 28 by 56 WLBK Radio Home at 711 North First Street, De Kalb; to move the tower and transmitting equipment to the new site; and to buy a new transmitter, recording equipment, and fixtures.

In October 1959, after approval by the Federal Communications Commission, Mr. and Mrs. George C. Biggar became owners of 70-percent control of the corporation, associated with Mr. and Mrs. John J. Dixon, Rockford, Ill., who purchased the remaining 30-percent minority interest. I remained as president and general manager, with Mr. Dixon, an experienced radio executive, becoming secretary-treasurer and consultant.

BACKGROUND OF MANAGEMENT

I am a 1921 graduate in agriculture of South Dakota State College with a master of science degree in dairy production and economics in 1922. My interest in journalism, however, prompted me to become a newspaper reporter with the Moline (Ill.) Dispatch in 1923, followed by appointment with the Illinois Agricultural Association (State Farm Bureau) in Chicago as assistant publicity director.

On May 1, 1924, I joined the new WLS, Chicago, as farm and market editor. WLS was primarily a farm and home service station, operated by the Sears-Roebuck Agricultural Association. It was my primary duty to establish and to build up a complete farm market schedule, also conduct daily farm programs in cooperation with the U.S. Department of Agriculture, agricultural colleges, and farm organizations.

I was an executive of the WLS staff for approximately 18 years, principally as program director. I also served as farm program executive and program director of station WLW, the Crosley Corp., Cincinnati, for 7 years; 2 years as general manager of WIBC, Indianapolis; and 1 year as general manager of KCRG, Cedar Rapids, Iowa. As previously noted, I became part owner and manager of WLBK, De Kalb, Ill., in November 1953.

INDUSTRY RESPONSIBILITIES

I served as a member of the standards of practice committee of the National Association of Broadcasters in 1947; was president of the Indiana Broadcasters Association in 1947; and president of the Illinois Broadcasters Association in 1957.

Presently, I am a member of the Illinois Industry Committee of the Federal Communications Commission.

COMMUNITY ACTIVITIES

In De Kalb, I am a trustee of the First Methodist Church; member of the board of directors of the De Kalb Kiwanis Club; and have served as president of the De Kalb Community Chest and president of the De Kalb Chamber of Commerce.

I am also a member of the Citizens' Advisory Committee of the University of Illinois.

For cooperation in soil conservation activities, I was recently made an honorary member of the Northeastern Illinois Land Council; and for cooperation with the Future Farmers of America youth organization, I have been named an honorary member of the De Kalb, Sycamore, and Waterman chapters of that group.

HOW DOES A LOCAL STATION LIKE WLBK SERVE ITS AREA?

It is of the utmost importance, in your consideration of legislation which would allow daytime radio stations to operate with uniform extended hours, that you have a broad knowledge of the broadcast services offered by community daytime stations which cannot and probably will never be offered by larger metropolitan stations. I can speak specifically of the many local broadcast services available to the families of our area only through WLBK, although I know that a large majority of the daytime stations, serving limited rural-urban areas, are serving their areas just as effectively—maybe better.

Most of these "daytimers"—well over 1,000 of them—have gone on the air since the end of World War II.

Because of their distinctively local services they have caused a revolutionary change in the American radio scene.

Daytime community stations have definitely made radio local. Just as people have for many years depended upon their hometown newspapers for their local news and advertising messages by their hometown retail stores, so do they now depend upon their local daytime radio stations for similar services.

Local radio offers, in addition: (1) National and world news, (2) immediate transmission of news and other services throughout each day of the week, (3) opportunities for more local citizens' participa-

tion in talks, discussions and forums, and (4) musical entertainment of the same variety and quality as offered by metropolitan stations.

WLBK'S COMMUNITY SERVICE TO ITS AREA

There are approximately 27,000 people living within 7 miles of the WLKB transmitter, including De Kalb—over 18,000; Sycamore—over 7,500; Cortland, Malta, and the rural area—1,500.

De Kalb County has over 47,500 population, and within WLBK's primary, or 0.5 millivolt coverage area, the estimated population is over 315,000. Of the total, approximately 36,000 people are engaged in farming.

WLBK is the only local radio station catering exclusively to the needs of this area.

Here is WLBK's story on News:

A rural De Kalb listener recently wrote:

You are giving us something that no other station in the United States can do—local news.

To provide that local news service, WLBK engages the worldwide facilities of the Associated Press and the services of one full-time and one par-time news man; three staff correspondents in the area; plus daily contacts with the Illinois State highway police, county sheriff's offices, local police stations, county coroners, funeral homes, public and parochial schools, hospitals, Northern Illinois University, and numerous other local area news sources.

From 6 a.m. weekdays until signoff, WLBK presents newscasts, mainly on the hour, of 5-, 10-, and 15-minute duration. Over 100 newscasts are on the air weekly to inform WLBK area families of the latest important world, national, State, and local news.

Newcasts are frequently augmented by the recorded voices of local area men and women who figure in news events.

Weather forecasts are always included—and we break into any program for emergency storm warnings.

FARM SERVICE

WLBK provides a local area farm service schedule in cooperation with all constructive organizations serving farm families.

Two main farm service programs are broadcast daily at times when farmers and their families can conveniently listen. (Too many metropolitan radio stations have made it their policy during recent years to present farm service very early in the morning and at other times which will cause the least tuneout of uninterested metropolitan listeners.)

Here is WLBK's Daily Farm Schedule:

5:45–6:40 a.m.: Farm Reporter Time: Farm interview; two newscasts; devotional period; music; complete weather and market reports.
7:55–8 a.m.: Complete weather roundup.
9:29 a.m.: Opening Chicago cattle and hog markets.
11:05 a.m.: Midmorning Chicago livestock and grain markets.
12:10–12:55 noon: Farm Roundup: Livestock summary and livestock estimates for next day; grain markets; weather; farm news; interviews with representatives of agricultural extension and farm organization authorities and farmers.
12:55: Big weather picture.
Sundays: 12:15 to 12:30 p.m.: Illinois RFD Roundup.

Weather forecasts are included in every newscast during the week. No radio station but WLBK can give—and gives—such a broad and complete localized farm service schedule to its primary area.

Here are the names of organizations with which WLBK cooperates daily and weekly for farm service reports and interviews:

U.S. Department of Agriculture.
University of Illinois College of Agriculture.
County agricultural agents of De Kalb, Ogle, and Lee Counties.
4–H and home demonstration agents of De Kalb County.
Illinois Agricultural Association.
De Kalb County Farm Bureau.
U.S. Soil Conservation Service.
The Grange and Farmers' Union.
Chicago Union Stock Yards.
Area farmers.

For special farm events, WLBK cooperates in the annual broadcasts of county fairs, 4–H fairs and chamber of commerce farm days.

Do farmers respond to local daytime farm service?

In a communications survey made by the De Kalb County Extension Service in December 1959 in which 100 farmers throughout the county participated—evidence of this response is proved.

Total listenership to noon farm programs available

	Percent
Tune to WLBK, only	28
Tune to WLS,[1] Chicago only	10
Tune to WGN, Chicago only	4

TOTAL RADIO STATIONS HEARD AT NOON FOR FARM PROGRAMS

Usually tuned in WLBK at noon	67
Usually tuned in WLS[1] at noon	51
Usually tuned in WGN at noon	16
Usually tuned in other stations	7

[1] Since the December farm survey was made, station WLS changed ownership and has greatly deemphasized farm service to favor metropolitan listenership, so WLBK no doubt has still heavier farm listenership now.

NOTE.—Percentages total over 100 percent as some farm families turned in more than one station at noon. Similar heavy WLBK listenership was indicated for early morning farm-service programs from various available stations.

HOME SERVICE

Homemakers in the cities, villages, and on the farms of the area served by WLBK constitute at least 75 percent of the daytime audience served by our station.

Almost all of the programs are keyed to women's interests except for the broadcasts of general or specific farm interest.

WLBK broadcasts a daily Trading Post—9:40 to 10 a.m.—during which women who have inexpensive used household items may exchange or sell them gratis. They may also advertise lost and found articles and items they wish to buy.

"At Your Service"—9:05 to 9:29 a.m.—is an open forum program broadcast daily—during which the announcer welcomes questions from listeners in two-sided telephone conversations. Other listeners call to answer the questions. Frequently, the women give "pros and cons" on topics of general community interest, such as school problems, street repair, etc.

"Mary Blaine Time" daily—10:30 to 10:45 a.m.—brings the voice of an authoritative woman broadcaster with helpful discussions of

foods, recipes, and menus. This program is followed by "Better Living" with the WLBK women's director giving local news and views of interest primarily to women.

"Town Crier"—1:15 to 1:25 p.m.—features announcements regarding area church, lodge, club, and school organization activities. It is followed by "News in the Nursery"—1:25 to 1:30 p.m.—with announcements of births in the area.

Practicaly all of the above programs contain local information for homemakers—available on no other radio station.

FIVE COOKING SCHOOLS HELD

Climactic WLBK women's event each year is the WLBK cooking school and fashion show, held during February or March in the large Egyptian Theater, DeKalb.

With nationally known home economists from the National Livestock and Meat Board giving cooking demonstrations, and with a style parade by local women's and children's models, an average of from 900 to 1,000 homemakers from throughout the WLBK area attend each of the 4 days of the event.

This event—which promotes the proper preparation of meats and other foods—has been held by WLBK annually since 1956, for 5 years.

RELIGIOUS ACTIVITIES

Five local churches buy time from 15 minutes to 1 hour each Sunday to present their local services or to bring special radio messages. A national organization, the Chapel of the Air, purchases daily 15-minute programs for the same purpose.

Additionally, WLBK provides 15 minutes of valuable air time gratis 8:45 to 9 a.m. Mondays through Fridays, for religious messages and sacred music arranged by the DeKalb Ministerial Association. Local ministers from throughout the county participate.

Three hours, 12 to 3 p.m., on Good Friday, has been entirely set aside annually for the broadcast of the DeKalb Ministerial Association Good Friday services.

Time is also devoted to religious inspiration for shut-ins for 10 minutes at 2:30 each afternoon, a service provided by WLBK in the public interest. The Catholic "Sacred Heart" is a regular Sunday program at 11:45 a.m.

COMMUNITY ORGANIZATIONS

On time set aside for community service, WLBK gives several periods monthly for community organizations to present their own programs and campaigns.

Included are the DeKalb and Sycamore Chambers of Commerce, PTA councils, Federated Women's Club, Daughters of the American Revolution, Home Bureau, Boy and Girl Scouts, League of Women Voters, as well as other groups dedicated to serving their community.

SERVICE TO SCHOOLS OF THE AREA

Believing that constructive service to aid schools and to publicize school activities of the area is a definite function of a community radio

station, WLBK conducts the following annual programs and projects: 1. Know your schools program; 2. Child safety programs and contests; 3. Voice of democracy contest; 4. Emergency broadcasts for all schools; 5. Northern Illinois University programs.

1. "Know Your School": This is the title of a weekly 15-minute program, 10:45 to 11 a.m. Saturdays, which includes important news of boards of education and public and parochial school activities covering WLBK's service area. All schools are contacted by mail to furnish news for the program—and school administrators personally report to the public on many of the school year broadcasts.

2. Child safety programs and contests: In addition to broadcasting adult and child traffic and farm safety messages throughout the year, WLBK has held three annual safety slogan contests for grade school boys and girls of the area.

This year, 591 children in 32 different elementary schools, submitted safety slogans. Some schools made sloganwriting classroom projects.

Thus, on the local level, our community radio station stimulates thought and action to save lives by the prevention of accidents.

3. Voice of democracy contest: For 2 years, in cooperation with the Veterans of Foreign Wars and high school administrators and teachers of the area WLKB has conducted an annual voice of democracy contest.

To participate, high school sophomores, juniors, and seniors are invited to write and to deliver commentaries of from 3 to 5 minutes on the topic "I Speak for Democracy."

In November 1959, over 100 students from nine high schools entered their local contests, the winners participating in an areawide competition.

Winners were given plaques and/or bonds, and public presentations of the various high school winners are made before service clubs of the various communities.

4. Emergency broadcasts for all schools: Another service to schools that can only be handled by a community radio station is emergency service in connection with blizzards or serious storms which make school closings or curtailment of activities necessary.

Throughout each morning and late afternoon when bad storms occur, school superintendents and principals telephone WLBK with information to relay over the air to their pupils and school patrons regarding hazardous road conditions, temporary closing of the schools, the routing of buses, etc.

This is one of the most necessary and appreciated services provided for area schools by their community station WLBK.

5. Northern Illinois University program: During the college year, Northern Illinois University in DeKalb (enrollment over 6,000) conducts a daily 5-minute afternoon program of news, sports, and announcements on WLBK. This program is of areawide as well as university interest.

Also during the year, WLBK broadcasts special programs from the university, including Handel's "The Messiah," the commencement exercises, and other programs.

TIME GIVEN FOR SENATORS AND CONGRESSMEN, VOTE CAMPAIGNS

Senators Everett M. Dirksen and Paul Douglas of Illinois, during congressional sessions for the past 2 or 3 years, have each been pro-

vided with 15 minutes weekly for messages to the public on important topics having to do with the U.S. Government.

Likewise, Congressman Noah M. Mason has been allocated weekly time for messages.

County and State senators, representatives, and officials appear on WLBK from time to time with important news and facts that they want to get to the public.

In connection with primary and general election campaigns, WLBK broadcasts many announcements to stimulate "get out the vote," stressing the importance of every citizen going to the polls.

ENTERTAINMENT

As noted in the foregoing pages, WLBK has a most comprehensive public service schedule because its ownership and management believe that the providing of adequate information and service to the public is a No. 1 function of a radio station.

We do not believe that the modern trend of "music and news" as the primary program ingredients of a radio station's schedule fulfill its obligation to the public nor does such a format justify the stewardship that the Federal Communications Commission entrusts to a station's ownership.

However, at least 50 percent of WLBK's time is devoted to musical entertainment, particularly in the afternoons. Types of music and artists are chosen as the result of listener surveys made annually, resulting in a music schedule that is distinctively "adult" in appeal.

DOES THE PUBLIC RESPOND TO WLBK'S GENERAL PROGRAMING POLICIES?

The answer to this question is definitely "Yes."

Periodic surveys prove that WLBK maintains over 50 percent of the available radio listening audience every weekday, with no one competitive station in Chicago with large power having as much as 20 percent of this available tune-in.

In WLBK's immediate area, surveys show that from 85 to 90 percent of the families tune in WLBK with some regularity throughout each week.

It might be well to call attention to the fact that WLBK's entire staff consists of only eight full-time employees, three part time, and three news correspondents. A community station cannot afford a large staff.

The comprehensive program schedule, services, and projects herein outlined, carried out by a metropolitan station, could well require from 20 to 30 full-time staff members.

WHAT WOULD BE THE ADVANTAGES OF UNIFORM, EXTENDED HOURS THROUGHOUT THE YEAR?

The purpose of this hearing is to give daytime stations the opportunity to present reasons why it is of great importance to the people of their communities that uniform hours of operation from 6 a.m. to 6 p.m. be granted throughout the year.

WLBK, as a daytime station, finds itself seriously hampered during the late fall, winter, and early spring months by reason of being re-

quired to sign off at sundown. Here are the irregular signoff times: November–December, 4:30 p.m.; January, 4:45 p.m.; February, 5:30 p.m.

During the remainder of the year, we may sign off at 6 p.m., or at sunset, whichever is later. Except for the fact that we have daylight saving time from April through October—we would be required to sign off at 5:15 in October.

The months of November through February are most important for local radio service.

These are the winter months when we should be on the air at least until 6 p.m. with weather reports, and specially storm warnings and special emergency announcements for schools of the area. With the necessity of before 6 p.m. signoff, we cannot render nearly as complete a local service as we should.

We cannot provide farm market reports—so important to farmers in planning their next day's shipping—as late as we should during the winter months.

We are unable to give local news and civic organization announcements for town and city residents after 4:30 to 5:30 p.m. during November through February. Most of these people are not home from their industries, stores, and offices until after 5 p.m.

During the winter shopping months of November and December we do not have sufficient time to serve retailers of the area with all the announcements necessary to reach the public.

WHAT WLBK WOULD DO FROM 5:30 TO 6 P.M.

If daytime stations were granted the opportunity for uniform signoff at 6 p.m., WLBK would, throughout the year, devote the 5:30 to 6 p.m. time to this type of schedule: Local, national, State, and world news; the day's financial news highlights; market summaries and next day's livestock estimates; weather forecasts, conditions, and storm warnings; announcements of important events scheduled that evening throughout the area.

It is, under present signoff conditions, impossible to provide such a highlight news and community service program uniformly throughout the year at a time when the largest potential audience is available.

DOES THIS SITUATION SHOW INCONSISTENCY?

It will be noted that I have stressed the importance to WLBK of a uniform 6 p.m. signoff.

I have not mentioned a 6 a.m. sign-on throughout the year because WLBK since the beginning of its operation, has, due to its regional frequency of 1360 kilocycles, been permitted to sign-on before sunrise throughout the year. This is in accordance with FCC rule No. 3.87.

In spite of its presunrise sign-on, spring, summer, fall, and winter since 1947—WLBK has, to the best of my knowledge, never had a complaint concerning early morning interference to regional broadcasting stations sharing the 1360 frequency.

If—for over 12 years—WLBK has provided local news and farm service to its coverage area before sunrise the year around—without

resultant complaints of interference—is it not logical to assume that a uniform 6 p.m. signoff would work out just as satisfactorily—and to the definite advantage of the people of our area who have the right to expect as many hours as possible of local service from their community radio station.

The CHAIRMAN. Mr. Biggar, your entire statement will be included in the record. I followed you almost page by page, and you have done a splendid job in presenting what I consider to be a very fine statement.

Mr. AVERY. I want to join the chairman in commending particularly your ability to summarize a rather lengthy statement that you have prepared, and I agree with the chairman that you have, I think, touched the important points.

The CHAIRMAN. Thank you for your appearance and your interest in this subject.

Mr. Biggar, would you return to the stand for just a few minutes? Did you interview Mr. Khrushchev?

Mr. BIGGAR. He did not get to De Kalb. A year before they had some agricultural leaders there, and we interviewed them, sir.

Mr. WATSON. Mr. Chairman, I just want to make a few little statements.

The CHAIRMAN. Mr. Biggar, I would like to mention the fact that your Congressman, Mr. Noah Mason, spoke to me about your appearance here, and expressed an interest in your testimony and your presentation. Since you mentioned him in your statement, I thought you might like to know that he has also expressed an interest in your appearance here today, too.

Mr. Watson?

STATEMENT OF CHAUNCEY B. WATSON, DE KALB, ILL.

Mr. WATSON. Mr. Chairman, I am going to skip this entire report and say just this: that up until May 1 of this year, our area was well taken care of so far as farm service is concerned by WLS in Chicago; but since they changed hands, their farm program has diminished considerably, and it has turned many listeners in our area to WLBK for the farm service which they are rendering. And they are really bringing to the farm area local news and local events and features of all kinds that the community are greatly interested in.

And we think it would be a splendid service to the community if the station might have the 6 in the morning to the 6 in the evening period within which to broadcast.

I will just read the closing statement, and then I am through.

I know that I reflect the wishes of a great many farmers of the De Kalb area, as well as town and city people, when I say I hope local listeners are not going to be much longer deprived of service from their local radio stations by the sunrise-sunset signoff regulations.

Thank you.

The CHAIRMAN. Mr. Watson, do you desire your entire statement to be included in the record?

Mr. WATSON. I would be very pleased.

The CHAIRMAN. It will be included at this point.

(The prepared statement of Chauncey B. Watson follows:)

STATEMENT OF CHAUNCEY B. WATSON, FARMER, DE KALB, ILL.

My name is Chauncey B. Watson from De Kalb, De Kalb County, Ill. I was born and reared on a farm which I now operate. I was graduated from the University of Illinois, College of Agriculture, in 1913. My son and I operate 640 acres of land which we own. We have been planting our entire farm to corn for the past several years. This year we have planted 60 acres of tomatoes and we are raising 90 acres of peas, the balance of the farm being planted to corn. In addition, we feed annually approximately 1,000 head of cattle.

For 4 years I was president of the Corn Belt Livestock Feeders Association with offices in Chicago. I have been president of the Kiwanis Club of De Kalb, in 1944; governor of the Illinois-Eastern Iowa District of Kiwanis International, in 1951; and chairman of the International Committee on Agriculture of Kiwanis International in 1954.

I am at present a resident member of the Illinois State Teachers College Board which administers the four teachers colleges of the State, of which Northern Illinois University at De Kalb is one.

Thirty or more years ago we had to depend on newspapers for our livestock and grain price quotations which came at least 1 day late. When we were getting ready to ship livestock, we had to use the telephone to check with our livestock commission company for immediate advice. When farm radio service started, we looked to it more and more and relied upon it for market quotations and weather forecasts. For the most part we relied upon WLS, Chicago, which was first operated by Sears, Roebuck and later for many years by the Prairie Farmer farm magazine. WLS, as a clear channel station on 50,000 watts, did an excellent job of providing a very satisfactory farm service schedule.

Later, the Chicago Tribune station, WGN, came into the farm broadcasting field and likewise has done a good job in recent years for midwestern farmers in general.

During the past several years, our local station in De Kalb, WLBK, has stressed farm service, particularly from the local angle. This station gives us our day's livestock receipts at 6 a.m. and frequently during the period from 6 to 8 a.m., with the Chicago market summary around 6:30, every morning. At noon, WLBK gives us the morning Chicago livestock report to open their farm roundup at 10 minutes after 12, and repeats these quotations along with a very important next day's estimated livestock receipts at 12:30.

I should also add that WLBK gives us a Chicago cattle and hog market opening about 9:30 every morning and later morning livestock and grain quotations about 11:05. On the noon "Farm Roundup," WLBK, besides giving the important market and weather reports, furnishes a lot of timely local area farming information every noon by agricultural extension farm advisers of our own and nearby counties. We get facts, for instance, on any crop insect or disease infestations in our county, with control measures, information that no other radio station gives us locally and which can and has saved us many dollars.

We also get a great deal of other information on crops and livestock as given in interviews with University of Illinois farm specialists and farmers of our county. We also get farm organization news on farm legislation and other topics from WLBK's noon farm program.

All of these services are valuable to us. I should mention also that WLBK, throughout the day, gives our own De Kalb area weather forecast, rather than a general State forecast which isn't too satisfactory. WLBK also gives local temperature and rainfall reports which I don't need to tell you gentlemen are invaluable to us farmers. More and more during recent years we have learned to depend on WLBK for farm service, especially local service that can be provided by no other station.

Just in the past few weeks, along with other farmers, we have realized more than ever the importance of our local radio station. In March, I think it was, WLS changed hands and is no longer operated by Prairie Farmer. Its new ownership and management, judging by the modern rock and roll music they put on, is playing up mainly to the big city audience and definitely deemphasizing farm service.

WLS still gives weather and market reports in short periods every morning about 5:30 and 6:30 but a busy farmer doesn't have time to listen through a lot of noisy music to hear the livestock receipts or what the weather is going to be.

We are pretty busy people and we like our farm markets and other farming information in concentrated form so we can get out to work. Also, at noontime, WLS has greatly curtailed its farm service, especially to us livestock farmers. I don't think it is good that a 50,000-watt station on a clear channel should cut down on farm service. I have always understood that the reason the FCC originally allowed them to have big power and a clear channel was to give considerable Midwest farm service to the farmers in our Corn and Dairy Belts centering in Chicago.

I am glad to say that WGN, a 50,000-watt, clear-channel station, takes its obligations for farm service more seriously with livestock markets and a farm program at noon and an early morning program. This is helpful to farmers throughout the Middle West. I might say, however, that WGN signs off its morning farm service at 6 a.m. daily and many farmers, particularly outside of the rush seasons of planting and harvesting, are not up that early in the morning. I suppose that is because most of us are busy with our farm business accounts or attending some meeting at night. The fact that WGN doesn't give livestock market news and the day's receipts in Chicago between 6 and 7 a.m. is where our local radio station, WLBK, comes into the picture.

WLBK gives a complete livestock, grain, poultry and egg, and weather and news schedule around 6:20 to 6:40 every morning which is most valuable to many of us farmers in the northern Illinois area. It is my understanding that many daytime radio stations like WLBK cannot be on the air until sunrise but that WLBK has this privilege because it is on a regional radio channel. I hope that WLBK never loses the privilege of going on the air at 6 a.m. or earlier throughout the year because if farmers couldn't get those markets and livestock receipts from WLBK between 6 and 7 each day the year round they would be deprived of one of their best farm radio services.

Now, as I understand it, all the daytime radio stations like WLBK would like to have the opportunity to operate year around from 6 a.m. to at least 6 p.m. Now judging by the farm and market and weather reports, the news and many other local services furnished by WLBK, it would be a definite advantage to most of us in the De Kalb area if WLBK could be on the air even more hours than they are asking. It really hampers WLBK's services to local area listeners when that station must sign off as early as 4:30 every afternoon during the midwinter months. If they were on at least until 6 p.m. I know we farmers and a lot of other people in our area could get important blizzard and storm warnings, latest farm market conditions and a great deal of news about local affairs including important meetings for the evening, which we cannot now get after 4:30 or 4:45 in the afternoon in midwinter.

I've noticed also how the public and parochial schools of De Kalb County depend almost 100 percent on WLBK for early morning and late afternoon emergency information when we have blizzard conditions. The school administrators phone WLBK to announce school closings or curtailment of schoolbus service. This is invaluable service no other medium can give—and it is usually available only in the morning and late afternoons. Such service is prevented by early signoffs on winter afternoons. I know that I reflect the wishes of a great many farmers of the De Kalb area, as well as town and city people, when I say I hope local listeners are not going to be much longer deprived of service from their local radio stations by the sunrise-sunset signoff regulations.

The CHAIRMAN. I have had occasion to look over it, and I do observe that there is a very fine statement here covering a good many of the same problems in a different way. It does add up to the fact that you people out there are interested in this subject matter.

Mr. WATSON. Indeed we are. Locally we are interested in this station because it is bringing us so much current information.

The CHAIRMAN. Mr. Avery?

Mr. AVERY. I assume, Mr. Watson, that you are on a regional channel, and that you do come on in the morning before sunrise?

Mr. WATSON. We come on at 6 o'clock in the morning.

Mr. AVERY. And has there been, to your knowledge, a complaint made by a clear channel station, or a regional station?

Mr. WATSON. Not that I know of; not direct to me.

Mr. AVERY. It has not come to your attention?

Mr. WATSON. It has not. We have had good service over WLS and WGN. But they just do not have, let us say, a complete farm program, such as we get locally.

Mr. AVERY. I would not think there would be any mystery why a Chicago station would not have a complete farm program.

Mr. WATSON. WLS used to have it.

Mr. AVERY. Yes; but not in the context that a farmer considers it a local farm program. It is a little higher level, if you please, and does not reflect the things that he is primarily interested in.

Mr. WATSON. I understand. Thank you.

The CHAIRMAN. Mr. Watson, thank you very much.

Mr. Alfred Sorenson.

STATEMENT OF ALFRED F. SORENSON, GENERAL MANAGER OF WKRS, WAUKEGAN, ILL.

Mr. SORENSON. My name is Alfred F. Sorenson, and I am general manager of radio station WKRS, in Waukegan, Ill. WKRS is a daytime broadcasting station, operating between the hours of sunup and sundown, on an assigned frequency of 1220 kilocycles. It is the only radio station in Lake County, Ill. Waukegan itself is located halfway between Chicago, Ill., and Milwaukee, Wis., and is the largest city in, and the seat of the county of Lake. The 1960 census shows Lake County to have over 290,000 people, making it the third largest county in the State of Illinois. Its people are served by only 1 daily newspaper, and by some 17 weekly papers, in addition to the daily daytime-only programing of WKRS.

While many radio stations can be heard in Lake County, none but WKRS give any coverage of news and activities of the county. The programing of Chicago stations is directed to the Chicago market, or is so general in its nature that it has no more meaning to one part of the Nation than to another. Nor do the stations in Milwaukee offer programing of local interest to the residents of Lake County. By contrast, WKRS does cover the events of Lake County, and the activities of its 290,000 residents. Emphasizing the larger cities like Waukegan (53,000) and North Chicago (22,000), WKRS also includes the news of Highland Park, Zion, Lake Forest, Libertyville, Mundelein, Grayslake, Round Lake, Fox Lake, Antioch, and the other communities of the county. The WKRS news department has five full-time members, and two part-time employees, all seven engaged in collection, writing, and delivery of local area news. These radio newsmen attend council meetings, county board sessions, and meetings of zoning boards, school boards, et cetera.

A WKRS news reporter appears daily 7 days a week, as early as 4 a.m. at the Lake County sheriff's office and the Waukegan police department. Every morning, our reporters are in touch with the police departments of all the other major communities in our county, and with the hospitals, and with the State police and the tollway police. Every day, our reporters visit with city officials and county officials, and attend court sessions.

Our newsmen make use of portable tape recorders and newsroom telephone recording devices to bring our listeners the actual voices of the people who make the news. They keep in constant communication

with the Lake County police radio network, and maintain a permanent liaison with school officials, funeral directors, chamber of commerce officials, association executives, and officials of social agencies and charitable organizations, in order the WKRS listeners know what's going on now, rather than at newspaper press time—be it daily or weekly. We consider our daily news schedule of half-hourly local reports to be essential to our listeners. In the nearly 11 years WKRS has been operating, the people of our area have come to expect this service, and in our opinion, they deserve it. We have steadily increased the amount of local news presented until now we have between 6 a.m. and 6 p.m. a total of nearly 3½ hours of local news, sports, and weather information, in programs ranging from 5 to 15 minutes in length.

We also program world, national, and statewide news, sometimes separately, and sometimes in conjunction with our local newcasts. The local service rendered by WKRS does not consist solely of scheduled informational programs.

During the early morning hours as well as the later afternoon traffic periods, WKRS repeats the local weather information at least every 5 minutes, and in the event of storm conditions, provides its listeners with complete details (the station has a direct teletype connection with the U.S. Weather Bureau station in Chicago, and checks periodically with the local weather observers in Waukegan, Antioch, and Lake Forest, in addition to operating its own temperature, humidity, and wind instruments at the station site).

During occasions of bad weather, WKRS is the only source of information to drivers about the closing of certain roads and highways, or other hazardous conditions. We are the only source of complete and accurate information pertaining to the closing of schools, or the postponement of other gatherings and events. We are equipped to and actually do receive school closing information from more than 200 school principals and superintendents, and the Lake County superintendent of schools depends on WKRS to inform him of the schools which are closing in such emergencies.

WKRS cooperates with officials throughout the country in stimulating public interest in community projects or in curbing public curiosity in such occurrences as fires and disasters, and with civil defense officials in the conelrad defense alert system.

Frequently, the twilight hours just prior to sunup or immediately following sunset are those in which disasters occur, storms develop, events are postponed, or when an enemy attack might occur. And it is during these hours that radio listeners are present in the largest quantities, before starting work, or coming home from work. Also, these are the hours in which many interesting and important news stores become available to our reporter and awaited by our listeners.

These are the hours in which scores of local sporting events may become available, legal trials end, announcements of postponements made. But in these critical hours when the news is likely to be of the greatest importance and most timely in nature; when the listeners are in greatest abundance and most intensely interested; when WKRS is ready and anxious to report in these hours, WKRS is silent, during 4 or 5 months of the year. And these are the twilight hours when interference with existing clear channel stations can be expected to be the least. What kind of information is being programed by

50,000-watt clear channel stations during the traffic hours from 4 to 6, for example? Very likely, it's a program of records available to every radio station in America, interrupted by frequent traffic reports that tell motorists how to get from one end of Chicago's outer drive to another, or where highway congestion is the least between Baltimore and Washington.

Gentlemen of the subcommittee, I am sure that this is not information that is essential to the residents of the so-called white areas of our Nation. I am sure that whatever may be programed by the clear channel stations during the twilight hours in traffic time, that is, the hours between 6 a.m. and sunrise, and the hours between sunset and 6 p.m., that programing will not be of such essence to potential listeners in the fringe areas of the stations that it could nearly equal the importance to the public of the programing of local daytime stations, were they allowed to operate in these time periods.

Turning to another aspect of the difficulties caused by the Federal Communications Commission's regulation pertaining to daytime broadcasting stations, I would like to cite the position of the advertiser. Among the clients of WKRS, Waukegan, are many small businessmen who are pleased to sponsor local news and other such informational programs. They not only consider it good advertising, but in my opinion, are helping to underwrite a worthy project of public interest. We encourage sponsorship of such programs, in preference to simple spot announcement participation, but regardless of which form of advertising the client chooses, he is either directly or indirectly underwriting the news and various informational services of WKRS, and thus helping to support our listener services. It is my opinion that those advertisers who prefer to schedule their advertising in the early morning or late afternoon traffic hours are deserving of the opportunity to do so.

Nearly all of our business is done with local firms. We believe these small businessmen are entitled to stabilized advertising schedules, even as our listeners are entitled to a year-round continuity of local information services.

The constantly changing schedule of the daytime station confuses the listeners, and confounds the advertisers. The listeners chase their favorite programs around the clock, and the sponsors hope the audience will be able to keep up with the monthly shifts. So do the station operators, who are joined by their employees in the sincere hope that the Congress of the United States will determine a way by which all the 1,700 daytime broadcasting stations in America can stabilize their hours of operation, thereby giving uniformity to their programing, and better service to those thousands of your constituents who dwell within their coverage areas. For every daytime station in the country, there are thousands of citizen-taxpayers who are being deprived of local news and informational service. This is news and service that no clear channel station can or will provide. But it is a service the daytimers can and will provide.

On behalf of those who would serve, and in the interests of those who would be served, I ask you gentlemen of the subcommittee to look favorably on the proposals to give daytime broadcasting stations additional hours of operation, a longer broadcast day, throughout the year.

I thank you for your attention and for the opportunity to come before this great body today.

The CHAIRMAN. Mr. Sorenson, your complete statement will be included in the record.

It does seem to me that the problem here that we must resolve is whether or not, by the extension of this service beyond sunset, and prior to sunrise, this will reduce service or provide greater service.

Notwithstanding the desire, which I can appreciate, of people on both sides, the real crux of the thing which is presented here, that you are getting at—the Communications Commission says if this is done the fact of interference will reduce the service.

Now, if that were to be the result, then there would be only one answer, would there not?

Mr. SORENSON. Yes, sir. Personally, I believe it is like two empty baskets. We are weighing the gains and losses, balancing them out. Do we gain more by this proposal than we lose?

But I do think it is important that we weigh not only the quantity of man-hours that are involved in listenership, but also the kind of program to which they are listening.

I do not mean from a standpoint of professional quality so much as importance.

The CHAIRMAN. Why could you not take a given area and have a true test to see whether or not we would have increased service or reduced service? One group says they will increase the service. The FCC says it will reduce the service.

I am sure the testimony of both sides is based on engineering data. I do not think you gentlemen would come up here trying to, well, discount what the FCC said, unless you had made some engineering studies of the problem.

Mr. SORENSON. I agree with you, sir, that a test should be, if not conclusive, at least very helpful. I do suspect that were one test made involving the WKRS, Waukegan area and then at a later time a test made involving the WLBH, Mattoon area, the results might not be exactly identical.

The CHAIRMAN. No, I do not mean to take a county where there is just one station involved, you might say. I mean take a region, a great big area, where there are a lot of stations in the region, and test out that region.

Mr. SORENSON. I would think that would be certainly quite fair.

Mr. AVERY. I have only one question.

On your rate card, upon which you base your advertising sales, would not the extra time permitted under the bill before the committee add to your broadcasting schedule the hours that would come within the highest rates on your card?

Mr. SORENSON. Under our existing rate card, this would be more untrue than true. We class, in a prime category, that period from 6 to 9 in the morning. I believe that we would, given a minimum 12-hour day, class that time, shall we say, between 4:30 or 4 o'clock and 6 p.m., also as prime time. But we do not do so under the existing situation, because it is a time period that is irregularly offered. And for that reason, we do not.

I would concede that, given a 12-hour day, this would be prime time, very definitely. And as it is prime to us, as sellers of the ad-

vertising, it is also prime listening time to the listener. It is of prime importance to him.

Mr. AVERY. That is all. We certainly appreciate your contribution toward the hearing record.

The CHAIRMAN. Thank you very much.

This concludes the hearing for today.

Did I miss anybody that was supposed to testify today?

I know you have come long distances.

Mr. COTTONE. We decided to submit Mr. Adams' statement for the record, Mr. Chairman. So he will not testify.

The CHAIRMAN. Yes, I do have a statement of Mr. Richard E. Adams, treasurer and general manager, radio station WKOX, Framingham, Mass.

Mr. COTTONE. That will merely be submitted for the record.

The CHAIRMAN. Mr. Adams' statement may go into the record at this point.

(The prepared statement of Richard E. Adams follows:)

STATEMENT OF RICHARD E. ADAMS, TREASURER AND GENERAL MANAGER, RADIO STATION WKOX, FRAMINGHAM, MASS.

I am president of DBA, but I am appearing here on behalf of WKOX, of which I am part owner and general manager.

Radio station WKOX is a daytime-only station and is authorized to operate on the frequency 1190 kilocycles with power of 1 kilowatt in Framingham, Mass. Since 1947, WKOX has been the only standard broadcast station licensed to serve Framingham, a town of more than 36,000 persons located midway between Boston and Worcester. WKOX is the only radio station between these two cities and serves this area with a population of approximately 100,000 people in the Greater Framingham area. Framingham is recognized to be the fastest growing community in the State.

In the 13 years in which WKOX has operated, it has achieved a complete identification with the community of Framingham and with the needs and interests of the area which it has served. During this period it has served the public in a variety of ways. It has met the needs of the town officials, police departments, fire departments, churches, and numerous local civic and charitable organizations. It has met every request and indeed has on numerous occasions volunteered its facilities in times of disaster and emergency.

Shortly after WKOX commenced operation in 1947, it became apparent that standardized hours of operation were required in order that the station might better serve the public interest. We were then advised by our attorney that under the Commission's rules we could obtain authority to extend our broadcast day so that we would sign off at the time of local sunset at Fort Wayne, Ind., which would be 1 hour later than sunset at Framingham. At that time, radio station WOWO was authorized to operate on 1190 kilocycles at Fort Wayne, Ind., with power of 10 kilowatts unlimited time.

On August 13, 1948, an application was filed with the Federal Communications Commission requesting authority to change the hours of operation of WKOX from daytime only to limited time or at the time of sunset at Fort Wayne. However, we were notified by the Federal Communications Commission that because of a "freeze" no action would be taken on our application at that time.

Almost 10 years elapsed and our application remained on file with the Commission without action—and from all appearances—without consideration of any kind. During this period, however, on March 26, 1953, when our application had been pending about 5½ years, the Commission authorized WOWO to increase its power from 10 kilowatts to 50 kilowatts. Radio station WOWO is licensed to Westinghouse, the largest owner of clear channel broadcast stations in the United States. Westinghouse enjoys a great concentration of radio broadcast stations: In addition to WOWO, it owns and controls four 50-kilowatt clear-channel stations in the major markets of the country, namely, WBZ, Boston; KDKA, Pittsburgh; KWD, Cleveland; and KEX, Portland. It also owns WIND, Chicago and WBZA, Springfield, Mass., and 5 VHF television stations.

Three years ago, I appeared before the Senate subcommittee of the Select Committee on Small Business and testified with respect to the history of our efforts before the Commission to obtain some relief. In its final report issued on September 11, 1957, the committee reviewed these facts and concluded that the Commission's inaction had produced "absurd results." The Commission had attempted to justify the freeze on the ground that it would constitute an "unmanageable administrative burden" if the Commission were to unfreeze our application. In its final report, which was unanimously adopted by the select committee, it concluded that:

"In the opinion of your committee, this response is unsatisfactory. How can the Commission tell the owner of the Framingham station that he must forgo a most valuable hour of operating time during the choicest broadcasting time because the administrative burden of processing applications of this sort would be 'totally unmanageable'? Is it not the duty of the Commission to make these decisions and to make them in the interest of the public? There can be no doubt that it is administratively easier for the Commission not to be faced by applications of this nature, but it would be even easier if they left the radio-broadcast situation just as it is today and refused to process any applications for new stations or changes in existing operations on any frequencies. This committee is not persuaded by the explanation of the FCC for continuing the broad freeze and urges that every effort be made to permit stations to have the maximum rights possible, consistent with the principle of preserving for the FCC freedom of action in connection with the overall questions involved in the proceedings involving clear-channel and daytime skywave."

In December of 1957, we filed a petition with the Commission in which we requested the Commission to act on our application which had been pending for so many years. We submitted an engineering statement with the petition which established that the authorization which we requested met every requirement of the Commission's rules. We pointed out that radio station WLIB, New York, N.Y., which was located 590 miles to the east of WOWO was authorized to operate on the same frequency, 1190 kilocycles, with power of 1 kilowatt with signoff at sunset at Fort Wayne, Ind. As you may know, New York City has over 30 radio stations, several of which are clear-channel stations, and 7 VHF television stations. We pointed out that in view of the fact that WKOX is located to the east of WOWO at a distance of 705 miles, it did not make sense to refuse the only station in Framingham the 1 extra hour which was so urgently needed in the public interest while authorizing such an extra hour to a daytime station in a city, over 100 miles closer to Fort Wayne, and having all this broadcast service.

In an affidavit which I submitted with that petition, I pointed out that in the 10-year period which had elapsed since our application was first filed and particularly in the past several years, there had been a tremendous industrial and population growth in our primary service area which had resulted in increasing demands on WKOX for a greater programing and news service. I pointed out that during the months of early signoff and particularly from November through February, we were simply unable to provide needed services such as current local road conditions, weather bulletins, industrial shift changes and other services of an urgent nature at a time when they were most needed. Further, I pointed out that the 1 extra hour of operation which we requested would enable us, particularly during the winter months, to render a service in the public interest when it was most needed and in an area which was not being served by any other local radio station.

Westinghouse opposed our petition urging that our application should remain frozen. Westinghouse had no answer to the matters raised in our petition except that it argued that the WLIB situation was different because WLIB had been granted the extra hour of time before the Commission imposed its freeze.

The Commission, however, permitted 5 more months to pass before it did anything and then on May 23, 1958, denied our petition. On June 23, 1958, we filed a petition for reconsideration of that decision. Once again we pointed out that the Commission had acted improperly by its continuing refusal and failure to act on our applications. Nevertheless no action was taken by the Commission and in practical effect the Commission, which had kept our application in cold storage for 11 years, now put our petition in the same freezer.

On September 18, 1959, the Commission issued a final report in the daytime skywave proceeding. In that report the Commission changed its rules, effective October 30, 1959, so as to preclude any new limited time operations on the clear channels. On October 29, 1959, however, the Commission took KPOP, Los An-

geles, Calif., out of its freeze and granted Storer Broadcasting Co., the licensee of that station, authority to increase the power of that limited-time station from 5 kilowatts to 50 kilowatts. There had been on file since the early part of 1949 an application to increase the power of the limited time authorization of KPOP. As recently as September of 1958 the Commission had advised KPOP that its application could not be considered because of the freeze. The following year, in April of 1959 the Commission approved the sale of that station to Storer Broadcasting Co.—and, as I have stated, a few months later in October of 1959 unfroze that application and granted an increase in power to 50 kilowatts.

On November 4, 1959, we filed a petition with the Commission. Please bear in mind that almost 13 years had elapsed since we first asked the Commission to authorize us to operate for 1 additional hour. More than 16 months had elapsed since we had requested the Commission to reconsider its denial of our petition to unfreeze our application. When we learned of the unfreezing and grant of the Storer application, we filed another petition. However, in view of the fact that the Commission had revised its rules to bar new limited-time authorizations we amended our application, supported by an engineering statement, and requested "specified hours" operation with operating hours from sunrise Framingham to the same signoff hours as those of station WLIB in New York. We also pointed out that even if the Commission were to consider our application as a "limited time" application it should be granted in view of its action granting the Storer application.

Then the Commission acted quite expeditiously. On November 25, 1959, it adopted a memorandum opinion and order in which it denied all of our requests and returned our amended application as not acceptable for filing. On December 11, 1959, in a final attempt to obtain relief from the Commission, we amended our application to reduce our request to specify 15 minutes per day less than the closer station WLIB. The Commission, however, has never taken any action on this amended application.

I am not a lawyer nor am I an engineer. I have, however, devoted my entire adult life to broadcasting and I am familiar with the problems of daytime broadcasters and the history of their repeated attempts to improve their facilities so that they may better serve the public interest. I am equally familiar with the repeated and uniform pattern of Commission action and inaction which has frustrated our attempts at every turn for the past 15 years.

There is one question to which we have never obtained the answer and which I hope will be answered—if it can be—before this hearing is concluded—How in good conscience could the Commission have taken KPOP out of the freeze and granted it and refuse to do the same for WKOX and other daytime stations?

The CHAIRMAN. Is there anyone here who is scheduled to testify tomorrow?

The committee will adjourn, and we will atempt to meet at 2 o'clock tomorrow afternoon.

(Whereupon, at 5:25 p.m., the subcommittee was adjourned, to reconvene at 2 p.m., Wednesday, June 15, 1960.)

DAYTIME BROADCAST STATIONS

WEDNESDAY, JUNE 15, 1960

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND POWER
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 2 p.m., pursuant to recess, in room 1334 of the New House Office Building, Hon. Oren Harris (chairman) presiding.

The CHAIRMAN. The committee will come to order.

As our first witness this afternoon, we are glad to welcome one of our colleagues, Mr. Coad of Iowa. Mr. Coad is the sponsor of H.R. 8286.

STATEMENT OF HON. MERWIN COAD, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IOWA

Mr. COAD. Thank you, Mr. Chairman.

I shall be brief.

The CHAIRMAN. Very well.

Mr. COAD. Mr. Chairman, I greatly appreciate the opportunity to present to you my statement in behalf of several bills, including my bill H.R. 8286 which would amend the Communications Act of 1934 to permit radio stations licensed for operation during daylight hours to broadcast during the hours from at least 6 ante meridiem to 6 post meridiem.

Now, I do not profess to be a communication or radio broadcasting expert or an expert in the field of foreign treaties, but during my investigations leading up to the introduction of my bill H.R. 8286, I have determined that there is a great public need for extending the broadcast hours of the daylight stations, and thereby extending their invaluable public service. Over 1,000 cities and communities containing millions of people are served only by daytime stations.

It is the daytime stations and the communities of people they serve that I am particularly interested in. It is the daytime station, in my opinion, which gives to its local listeners a very vital service and which American families have come to depend on for the greater enjoyment and convenience of community life. The public service performed by local daytime radio for the American people today merits and deserves more consideration than it has received in the past.

I am aware that the allocation of the 107 AM broadcast channels originally allowed only 6 local full-time channels. Certainly it is regrettable that there are not enough full-time channels to take care of all the needs of this country. Since we are foreclosed from this

probability as a practical matter and since reallocation of frequencies and channels is not feasible, the problem confronting the some 1,700 AM radio broadcasting stations which are permitted to operate only during the daytime is compounded.

These existing limitations work a hardship on millions of people served only by the daytime stations in their communities. These people are deprived of the opportunity to enjoy the local public service features which are now enjoyed by those people in areas served by full-time service. In my district in Iowa, the center of the Midwest, the very limited benefits extended to daylight stations under this bill would be a blessing to the people and a relief to station managers who are now endeavoring to provide the best community service possible under regulations which are confusing and indefinite. During the short days of the winter months radio operations are curtailed when they are needed most. I question the absolute necessity of such limitations and submit that in the best interests of the public a uniform regulation governing the operation of these daylight stations between the hours of 6 and 6 is most worthy of our most serious deliberation and consideration.

It is my conviction that over the past 25 years of broadcasting history the advent of television and the change in the pattern of listening and viewing habits of the American people, the small daytime station has grown in stature and importance in our community life. When we are most interested in local events and conditions which affect the daily routine of our families and millions of other families, we turn to our radios and our local station. It is a discredit to this Government and its regulatory bodies that several million U.S. citizens are disfranchised of this right at very critical hours of their day during certain seasons of the year.

I believe that a bill to permit daytime stations to broadcast between the hours of 6 a.m. and 6 p.m. is reasonable, it is timely, and most certainly in the best interests of the general public.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Coad, for your statement.

Mr. Younger, any questions?

Mr. YOUNGER. Yes, just one.

If it proved that the interference after 6 p.m. was of such a nature that your people could not receive either the local station or the clear channel, you would then agree, I think, that they ought to go back to some other kind of control, would you not?

Mr. COAD. Well, as I said in my statement, I am not an expert on this. However, from a layman's standpoint, I am aware of the fact that in the case of a small local station which has its only interference from broadcasting stations that are as far away as Mexico from my district—and I am speaking in that behalf—the local station has enough power that the long-range Mexican or Canadian channel would not interfere.

Now, I assume that this would not be the case were you down on the Texas border or up in northern Minnesota.

However, I also have been advised that the actual sunrise or sunset does not give the full effect. Now, there is some power difference, and it is some while after sunset that this actual difference takes place. And I think actually that this would not prove to be a problem if

6 o'clock in the morning and 6 o'clock in the evening were the actual hours.

Mr. YOUNGER. You still have not answered the question. After that discourse, you still have not answered the question whether, if your people in your district found after 6 p.m., they could not even get the daylight station or the clear channel station, you would be willing to go back to regulation.

Mr. COAD. We are not talking about after 6 o'clock. We are talking about up to 6 o'clock.

Mr. YOUNGER. All right. Up to 6 o'clock. Yes or no: Would you still be ready to go back to regulation?

Mr. COAD. Well, I think we would go back to whatever is feasible, and I am not saying that what we have presently is the most feasible operation.

Mr. YOUNGER. Well, you still have not answered the question. I guess I cannot get the answer, Mr. Chairman. Let it go.

Mr. COAD. Mr. Chairman, what he has asked for is a "Yes" or "No" answer, and I do not feel that a "Yes" or "No" answer is the logical answer in this case.

Mr. YOUNGER. Mr. Coad, we have engineers testifying on both sides of this question, that there is interference, and that a clear signal can be had from neither the clear channel station nor the daytime station if they are allowed to broadcast up to 6 o'clock. We have competent engineers on both sides. One says that it will not interfere, and one say that it will.

The only way that I can see is to test it. If it does not interfere, and the people are satisfied, OK. On the other hand, if it does interfere, and the listener cannot get a clear signal from either station, you have to go back.

Mr. COAD. Well, I agree with you that if nobody is satisfied, we would have to do something different.

Mr. YOUNGER. All right. That is all I am asking.

Mr. COAD. But I would say that from the standpoint of my district, the local station would not have any interference in that regard.

Mr. YOUNGER. You do not know that, Mr. Coad, and neither do I, because you have not tested it yet. But the engineers say that will be a condition. I do not know. I am saying if it is a condition, then we will have to make some change.

Mr. COAD. I would not say that it has not been tested. I have been in my automobile driving even late at night, and even when at midnight a station goes off the air which has been coming in loud and clear, then other stations do come in. But a local station does have enough power to keep crowded out these other more long-range stations.

Mr. YOUNGER. Well, our chairman has already testified that he cannot get reception on his car radio from 5 to 6 o'clock.

Mr. COAD. I might say I doubt most of my people would be listening to these clear channel stations from Mexico or from Canada, anyway.

Mr. YOUNGER. That is all. Thank you, Mr. Chairman.

Mr. AVERY. I have no questions. I would like to tell Mr. Coad we appreciate his testimony. I think the district he represents is geographically similar to the one I represent in Kansas.

The CHAIRMAN. Thank you, Mr. Coad. We appreciate your interest in this problem and your testimony.

We are also glad to welcome our colleague from Missouri, Mr. Jones, Paul Jones.

Mr. Jones has expressed an interest in this problem for some time.

We are glad to welcome you and appreciate having your testimony, Paul.

STATEMENT OF HON. PAUL C. JONES, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Mr. JONES. Thank you, Mr. Chairman and members of the committee.

I am in a rather peculiar position here today, somewhat embarrassing. I have a number of radio stations in my district who have asked me to appear here, and before I became a Member of Congress and before I had any intention or any idea that I would ever be a Member of Congress, I organized a company that put in a radio station. So I do have an interest in a daytime station.

But I hope that you will appreciate the fact that I am trying to testify as to the situation as I see it without any reference to my personal interest, and trying to represent that of the other constituents that I have.

However, I would benefit from it, and the people in my community would benefit.

I would like to comment at the beginning——

Mr. FLYNT. Mr. Chairman, I should like to say that we are always, of course, glad to have the gentleman from Missouri appear before our committee, and particularly to give us his views and the benefit of his experience in this field, in which he is extremely competent.

Mr. JONES. I thank the gentleman from Georgia.

I would like to comment on the question that the gentleman from California, Mr. Younger, asked in relation to the interference.

As I have viewed this problem, I think that all of the so-called daytime stations, or at least a vast majority of them, were put in for the purpose of rendering a service to the community. For instance, in the small community in which I live, our station was organized as a result of a chamber of commerce meeting. And it was a stock company, with people who are interested in the business of that community, and it was a community enterprise to start with. And still we have a number of stockholders; I think 19, to be exact.

We have tried to render a community service. And certainly, after this test, if the committee sees fit to authorize a test period, if we would find that neither station could be heard within the area that we are trying to serve, of course it would not be practical to continue it.

But when you get into the interference in the intermediate points, there, of course, you are going to have it. But my experience has been—and I am not a technician—that I think you will find that that interference will be somewhere in the intermediate points between the stations on the same frequency, and that you will not have the interference within the local area that you are serving; say, in the case of the station at Kennett, Mo., where we feel we are trying to serve an area of a radius of some 30 or 35 miles. I do not feel that we would be interfered with, and I do not think that we would interfere with

other stations that might be on the same frequency within an area of some 50 to 75 miles of their operation. And there we could give both communities a local community service. And I hope that the committee will see fit to give this 6 a.m. to 6 p.m. a trial.

Now, again, I am not an engineer, and I know that many of these regulations are based upon theory. We know that, like in many theories, when we get into the practical application it just does not prove out. And I think that the only way that we are going to determine the advantages of this is to give it a trial over the winter season.

Now, when I speak about the local services that the people in my area are deprived of, I am thinking particularly of the farmers. During this spring planting season, we were having a wet, cold, season there, and we had to go on the air later. Well, my farmers get up around 6 o'clock in the morning, and they are ready to turn on the radio. But during the winter time, it is 7:15 before we can go on the air. In the afternoon during 1 month it is 4:45 in the afternoon when we are off the air, at the time when they are coming in from their work and want to get the local news of the day.

We give them weather reports. We tell them about the planting. At the time we pick cotton down there, about the moisture, whether they can get out early that day, and things like that. Storm warnings; just the other day I was down in the district, and we had tornado warnings that were coming on. We have those in the spring.

That type of service is something that I feel could be of immense benefit to the people in those areas.

I do not want to take any more of your time.

I have read the statement of Mr. Everett Dillard, who is a professional engineer familiar with radio. I happen to have known Mr. Dillard for many years. In fact, he has done a lot of work for the station with which I am associated. I have also read the statement of Mr. Livesay of the Daytime Broadcasters. I would merely like to concur in their statements.

And I would certainly appreciate it if this committee can give favorable consideration to the request that is made, and which would be possible under the number of bills that have been introduced here.

Thank you, Mr. Chairman.

Mr. YOUNGER. I think you see the problem as I see it, here, with expert witnesses on both sides of the case. And yet you can take a district and make an experiment and find out actually what happens. It is the people that have the radios that we are endeavoring to serve. And if a longer time does not serve them properly, you and everyone else would want to change. And the only way we can settle this that I can see is to test it out. I do not see any other way.

Mr. JONES. During the past 13 years, I have had an opportunity to come in contact with a large number of operators of radio stations, particularly the smaller stations and the smaller communities. And I would say that almost without exception they are public spirited people who are interested in rendering a public service. You will find them to be reasonable people.

And all that we are asking is a reasonable opportunity to demonstrate. And you say we have engineers on both sides. But we find that in every case where we have people, and it is where their interest is that is how they testify, usually. I am not an expert. So I say,

"Let's give it a trial." And if it does not work out, the Federal Communications Commission is certainly adequate to take care of that.

Thank you, Mr. Chairman.

Mr. FLYNT. No questions, Mr. Chairman. I would like to again express my appreciation to our colleague for appearing before our subcommittee today.

The CHAIRMAN. Mr. Avery?

Mr. AVERY. I would like to join my friend from Georgia in expressing our appreciation to the gentleman from Missouri, Mr. Jones, for his appearance here, not only because we value his judgment always, but in this case more particularly because of the experience he has had in the field of broadcasting.

I do not think it will prolong the testimony if I ask a question. In your colloquy with Mr. Younger and others, you have come to the conclusion: If "it" does not work, we will return to the present limitation. Mr. Jones, what would you suggest to the committee as a test or measurement of whether this new schedule did work or not? Are we again going to rely on technical conclusions? Are we going into the field? Would you suggest we enter the field and make an intensive survey of the listeners? What do you mean by "it," if "it" does not work?

Mr. JONES. I think that what I would rely on in a case like that is the response that you are going to get from the public. I have found in the radio business particularly, it is astounding the number of letters that come to radio stations. The fact is that their mail will compare very favorably with that which comes to a congressional office. And if they begin getting interference on the station they are listening to there, you are going to hear from them.

Mr. AVERY. You would rely, then, if I could paraphrase what you say, on the voluntary expression from the listeners. Or do you think we should undertake to make some kind of a rather detailed survey?

Mr. JONES. Well, as I understand it, the Federal Communications Commission is making surveys most of the time, and they have men out in the field who are making checks on this.

Of course, radio is a peculiar thing. In the station that I am most familiar with, we get letters sometimes hundreds of miles away, people listening to our station. It is in an area that we are not particularly interested to serve. And yet we may, 20 miles away from home, hit a blind spot where we cannot even hear the station in my car radio.

So you have peculiar conditions, climatic conditions, of course, affecting it a lot. But, generally speaking, I think you can rely upon the public, with the Federal Communications Commission.

I think the Federal Communications Commission, if I have been able to correctly interpret their position, are kind of looking to Congress for guidance in this. I think they would like to have some guidance. And I am not as critical of the FCC as some of my people who are engaged in this work. But I think if Congress says: "Now, we want you to try this and to give it a fair trial," I think we can look to them, and if the objections are sufficient, maybe we can close it.

But if you will just permit me one more minute: So many people, when they get into the radio business, seem to think that they own an exclusive monopoly. Well, I do not think that is true at all. I think that this is a service for the people. And if a radio station does

not give the service, it is not entitled to stay on the air, to start with. And I have discussed it with the chairman and some others there, and I have some views which are contrary to those of some others who are in the business.

I have always contended we should pay a license fee which would be sufficient to operate the Federal Communications Commission and give them a sufficient staffing. They are handicapped there now because of not enough personnel. And I know that with this little station in which I have an interest there would be nothing unreasonable in the station paying $500 to $1,000 a year, and the bigger stations in proportion. Then you could expand the Federal Communications Commission, and it could be operated without cost to the Government.

And it would not be unreasonable, because in many instances we do have a monopoly. We have an obligation that I think we should fulfill. And that is my reason in appearing for these stations in my area, at least, to give them an opportunity to fulfill their obligation to the community to the fullest extent.

Mr. AVERY. Thank you, Mr. Jones.

The CHAIRMAN. Mr. Jones, I appreciate your testimony. Mr. Flynt has given us the benefit of your experience. Are you on a regional channel, or a local channel?

Mr. JONES. No; we are on a clear channel. The fact is that there are only three stations in the United States on the same channel as the station I am interested in.

The CHAIRMAN. Are you on a foreign clear channel?

Mr. JONES. No; we are on a domestic. We are 830 kilocycles.

The CHAIRMAN. U.S. clear channel?

Mr. JONES. U.S. clear channel.

I might tell you one short story of half a minute. When we first went on the air down there, even though WCCO is a big station, one of these skywaves bumped into one of these farm homes and the housewife wrote us a letter telling us how she was listening to our camp meeting broadcast when WCCO cut into the program. And she wrote:

You ought to do something to get that WCCO interference off your channel.

We were not trying to get into WCCO's territory, but our signal bumped in there. And they bump into us, too.

The CHAIRMAN. Is WCCO a full-time or a daytime station?

Mr. JONES. It is full time, all the time. It is a fine station.

The CHAIRMAN. WCCO then comes on with greater power at a certain time, at sunset?

Mr. JONES. Well, in other words, we are on the air at sunset, there, and WCCO does not interfere with our station at all within the area that we are operating. But the minute we go off the air, then WCCO comes in there. But WCCO comes in there with the same programs on a network that we can get from half a dozen other stations. That is the difference, there. They can get down there all right, no question about that. But they do not interfere with us, and I do not think they would interfere with us at 6 o'clock at night at any time.

The CHAIRMAN. The point I am trying to develop here, which will take just a minute: You go off the air at sunset?

Mr. JONES. Yes, sir.

The CHAIRMAN. WCCO comes on with increased power?

Mr. JONES. I do not know whether they come on with increased power, or not. I am not familiar with that.

The CHAIRMAN. Some of these stations do.

Mr. JONES. I think they are 50,000 watts all the time, Mr. Harris. That is my understanding.

The CHAIRMAN. There are some of them that are on in the daytime at reduced power, and then at sundown, when the daytime stations go off, they come on——

Mr. JONES. I think that would be true of your regional stations. But I do not think that would apply to WCCO. However, I am not an expert on that.

The CHAIRMAN. Well, I just wondered. In those circumstances, you people who are interested in these bills, from the standpoint of operations—would you have those stations that come on with increased power at sundown wait until the daytime stations go off at 6 o'clock at certain times of the year? Or would you let them come on with increased power at sunset, just like they do now?

Mr. JONES. No. I think, out of fairness, where there is increased power, they should come on at 6 o'clock.

The CHAIRMAN. And see what happens?

Mr. JONES. And see what happens; because what I am trying to point out: I think that a radio station is serving a certain area, and not trying to get national coverage; because I know of very few stations that are giving something so exclusive that it is of interest from Minneapolis down to Missouri. We like to go there for recreation, or something like that, but the service performed by that station has no interest to the people down in Missouri.

And after you get out of a radius of a hundred miles from there, I do not think they have any particular business or any reason to be protected beyond that area.

The CHAIRMAN. Well, it seems to me if we are going to have any kind of a test period at all, we have to have an accumulation of information. And unless somebody can advise me of reasons to the contrary, it would seem to me consideration could be given to all of these daytime stations throughout the country that are not on any foreign clear channel, with an accumulation of information for a short period of time.

And if that could be done, then it would seem to me that we could get not spotted information, but information that would be helpful.

Mr. JONES. Well, of course, I realize it is going to be hard to get legislation through at this session of the Congress, but it would be a mighty fine thing if you could get this test so that it could go on the air this fall. Then Congress is going to be back up here, and if it is wrong, I think in that period of time even Congress could repeal or revise your law.

But I would like to see this bill passed at this session of Congress, have it become law, and have the benefit, through December or January or somewhere in there, when Congress would be back. But this proposal has been postponed for years. It is not fair, what has been done.

In other words, I do not know why the big stations are so intent in keeping the smaller stations off the air or why they are so selfish, so greedy, to want to deprive the rural areas of a service that they need. They cannot get it anywhere else.

The CHAIRMAN. Thank you very much.

We appreciate your testimony.

Mr. JONES. Thank you.

The CHAIRMAN. Mr. Louis N. Seltzer, president, WCOJ, Chester County Broadcasting Co., at Coatesville, Pa.

Mr. Seltzer, we are taking you out of turn, because you are from outside of Washington, and we wanted to take first those who are from outside of the metropolitan area.

STATEMENT OF LOUIS N. SELTZER, PRESIDENT OF RADIO STATION WCOJ, COATESVILLE, PA.

Mr. SELTZER. May I proceed?

The CHAIRMAN. You may proceed.

Mr. SELTZER. My name is Louis N. Seltzer. I live at 1504 Caln Meeting House Road, Downingtown, Pa. I am president, chief engineer, and 50-percent owner of radio station WCOJ, Coatesville, Pa. I hold a B.A. degree in sciences from Temple University, which I received in June 1939. I spent 2 years in the employ of the Federal Communications Commission and 8 years as an electronics engineer in the employ of the Navy Department, Philco Corp., Hazeltine Corp., and the Applied Physics Laboratory of the Johns Hopkins University. In 1949 my partner and I received a grant for a radio station and I went into the broadcasting business in Chester County, Pa.—a business which I love dearly and in which I have been actively engaged ever since. I mention this background not to blow my own modest horn, but to show you that my background embraces both the technical and practical aspects of smalltown broadcasting.

WCOJ went on the air on November 27, 1949, and is now more than 10 years old. I know where its every wire, cable, coaxial line, and every piece of equipment is located, and why. I have been active in every facet of its day-by-day operation since its inception. I have sold time, swept floors in the absence of the janitor, written newscasts in the absence of a newsman, dreamed up the formats for many of its programs, repaired lightning damage at tower 4 at 3 o'clock in the morning, and sweated out every important management decision. I have also spent days and weeks on end driving around and climbing through the brambles of Pennsylvania and several other States checking the signal from my station and from other stations.

I am vigorously opposed to the efforts of the Daytime Broadcasters Association to obtain longer broadcasting hours than their present licenses authorize, and here is why:

First of all, I have a business which employees two dozen people in order to render a vital service. The DBA proposals would force me to retrench and curtail this service.

Even more important, however: WCOJ was first licensed as a 1,000-watt daytime-only operation, but not quite 4 years ago WCOJ commenced operation with 5,000 watts day and night, utilizing a four-tower directional system for nighttime operation, on its assigned frequency of 1420 kilocycles.

We had the choice of joining an organization such as the Daytime Broadcasters Association and hoping that their pie-in-the-sky desires would be granted, or doing something sensible. We chose to solve our

problem in an intelligent and businesslike way. We went to a local bank and borrowed what was to us a tremendous sum of money in order to take down our existing broadcasting tower and put up four new ones and to replace our 1-kilowatt transmitter with a much larger 5-kilowatt transmitter. What we did was a considered business risk. In our case the risk proved justified; we increased our coverage, doubled our staff, and doubled our volume of business.

I do not maintain that this path is open to all daytime stations, but it is open to many of them. This path, gentlemen, is the right path—the path which makes good engineering sense.

If the wishes of the DBA are granted, then the risk which we took at WCOJ will be rendered unjustified. I might as well take down three of our four towers and sign off as soon as the afternoon babel commences.

I am not in possession of quantitative statistics, but I do know that there are over 1,000 daytime stations, some of them of quite high power, and over 700 regional stations, most of them like mine, on the 41 channels available. On our own operating channel there are 37 daytime stations and 17 full-time stations.

I want to make clear to you gentlemen that this is not a fight between the "big guys" and the "little guys." WCOJ is not a plush operation. We are located in the hills of eastern Pennsylvania, 40 miles west of Philadelphia. The advertising agencies on Madison Avenue think that the Indians are still skulking around in the bushes and only a small part of our volume comes from this source. The great bulk of our business comes from little businessmen up and down Main Street in a handful of communities scattered around in our county. Most of the regional stations, like mine, are rendering a necessary advertising service to the small businessman on Main Street, U.S.A.

Perhaps you gentlemen are not aware of the fact that on regional channels what the DBA wants in the evening is already permitted in the morning. Legally, daytime-only stations are licensed to sign on at local sunrise, a specified time in the morning which varies with the months of the year, as local sunrise has been established ionosphere-wise by tests and measurements.

However, the FCC permits daytime stations to sign on as early as 4 a.m., rather than their legally licensed sign-on time, provided other stations on the channel do not protest. Since to date no station on 1420 kilocycles has protested, let me tell you what happens.

At WCOJ we program hillbilly music from 6:30 to 7 in the morning, entertaining mostly the farmers and the cows of Chester County. We had a client in Avondale who bought a 15-minute segment of this program to advertise his hillbilly park. (Avondale is 10 miles away.) The client canceled the business when he discovered that he could not hear his own program in Avondale.

Gentlemen, this is not complicated engineering doubletalk—I invite you to turn on your own radios early any morning and you can check out a dramatic demonstration of what happens. Until you get within a few miles of our transmitter, WCOJ provides nowhere near a primary service to what is normally our coverage area until at least 7:30 in the morning. Note that this early morning time is not nearly as precious to broadcasters as the early evening time which the DBA would have you render useless to us and to themselves.

The Daytime Broadcasters Association proposals have already been thoroughly considered by the Federal Communications Commission, which has—rightly—said "No." Now they are trying to sell a bill of goods to the Senators and Representatives in the Congress of the United States, picturing their "plight" as that of the little fellow versus the big fellow, with no mention of the engineering aspects of what they propose. To 99 percent of the consulting engineers their proposals are fantastic—to 100 percent of the management of the regional and clear channel stations, and not a few of the daytime stations themselves, their proposal is horrifying.

Gentlemen, let me try to reduce this situation to a frame of reference closer to our everyday experience. Suppose I came before this committee and asked you to abolish all traffic lights at street intersections. After all, the red lights prevent me from driving when I wish and when I wish without hindrance. I do not care that competent traffic engineers put these red lights up because they know that two cars cannot occupy the same place at the same time—any more than two radio signals can occupy the same channel in the same area at the same time. Does not this request, upon analysis, show up as nothing short of ridiculous?

I do not envy you gentlemen your job. Day after day you are buffeted with requests from one pressure group after another which desires some special consideration. You must decide what is in the public interest. What the DBA proposes is definitely not.

The CHAIRMAN. Mr. Flynt, any questions?

Mr. FLYNT. Yes, Mr. Chairman.

Mr. Seltzer, please refer to page 2 of your statement, about two-thirds of the way down, where you say that the path which you took is open to many of the daytime stations. What about a statement that has been given to us from several sources that there is a freeze on applications of present daytime stations to follow the path which you outlined?

Mr. SELTZER. I do not think that statement is literally true, sir.

Mr. FLYNT. Well, is it true?

Mr. SELTZER. Well, no, I do not think it is true.

Mr. FLYNT. Go ahead, then.

Mr. SELTZER. I think that actually this is a hard thing to evaluate because you would have to sit down and evaluate every daytimer in the country and make a frequency study in each area, and say, "Now, let's see. Maybe another frequency, with a directional system, would fit the pattern."

I mean, I cannot speak of what is going to happen in Iowa, at the station of one of the gentlemen who just testified. But I know this much: that in our own case analysis indicated that we could go to full time. And I know from practical experiences that in many cases some of these gentlemen who are sitting back and waiting for you fellows to give away something to them could follow the same course that we could. I would not care to say that it is exactly so many percent. I bet you that half the daytime stations could go to full time if they wanted to take our gamble. But they would have to pay for it, and they are not willing to pay for it.

Mr. FLYNT. Let me just call to your attention, for the sake of the record, here, that I know of one daytime station that has had an

application for a conversion to a full-time operation since before the Korean war. They were caught in the so-called freeze. They are not even given a hearing on the merits. But they tell me—and this is what I want to find out about—that they are being blocked by an arbitrary freeze ruling rather than by a determination on the merits.

Mr. SELTZER. I do not understand this freeze situation, Mr. Flynt.

Mr. FLYNT. When did you get your change?

Mr. SELTZER. Actually, the change was about 4 years ago, now.

Mr. FLYNT. When did you file your application?

Mr. SELTZER. About a year before that. We waited a year, in the normal FCC processes.

Mr. FLYNT. Are you familiar with the docket number of it?

Mr. SELTZER. I am sorry; not offhand.

Mr. FLYNT. Was it a matter of the application of radio station WCOJ? Would that be the general heading of it?

Mr. SELTZER. That is right, sir.

Mr. FLYNT. I would like to get a comparative analysis of the difference between your application and other applications which have been arbitrarily denied without even hearing the merits.

Mr. SELTZER. Mr. Flynt, I think you would find that they have not been arbitrarily denied. The FCC is beset with many problems. When a man applies for a given power increase, perhaps someone a few hundred miles away has done the same thing. Sometimes they have to be set up for hearing. And all this takes time. The Communications Act of 1934 states that the guy who gets it should be licensed, because he will operate best in the public interest. Things like this require time and determination. Not everybody could get what he wants. And I do not maintain that.

Mr. FLYNT. The next paragraph of your statement: What do you mean by "the afternoon babel"?

Mr. SELTZER. The same babel which is at 7 a.m. I invite you gentlemen to come to my area at 7 a.m. The only sacrifice we would have to make is to get up early.

Mr. FLYNT. Do you think we could get a fair test from the vicinity of Avondale, Pa.? Why not get a nationwide test? You might have particular atmospheric conditions or ionospheric conditions in the general vicinity of Avondale that would not prevail anywhere else.

Mr. SELTZER. Well, I agree that you cannot draw the general from the particular, there, but I think you would find that what happens in Avondale, Pa., at 7 o'clock in the morning happens to many other stations. I think this is not a peculiarity of this area, but quite the common experience.

Mr. FLYNT. Do you participate in this so-called babel, or is it just your competitors?

Mr. SELTZER. Well, we participate in it, because, while our service area is severely curtailed, we still feel that we can render some service. But I certainly do not want to see it curtailed in the afternoon as well, when the time is much more precious to us.

Mr. FLYNT. Have you thought about exercising your right of protest?

Mr. SELTZER. Yes, we have.

Mr. FLYNT. Have you done it?

Mr. SELTZER. We are considering it very seriously.

Mr. FLYNT. Have any of the listeners and the public generally filed a protest, either with you or with the Federal Communications Commission?

Mr. SELTZER. We have received numerous reports, verbal and by letter, from listeners, advising us that they do not hear us. We run a local news at 7:30 a.m. The next biggest town in my area is West Chester, Pa. We maintain studios there, substudios. We have a local newsman who covers the West Chester beat as his full-time job.

I would say that half the time my listeners in West Chester, Pa., cannot hear local news items of West Chester, Pa., at 7:30 in the morning, on our 7:30 a.m. local newscast.

This is a statistical matter. I cannot say that they do not hear it every morning. But I would say at least half the mornings and possibly a majority of them they cannot get it properly.

Mr. FLYNT. Were you serious about your statement that from 6:30 to 7 o'clock in the morning you program for "mostly the farmers and the cows of Chester County"?

Mr. SELTZER. Yes, sir, I was. Mine is a semirural area, and we do a regional job in our county. And I know in driving around in the early morning, I hear WCOJ pouring out of the barns.

Mr. FLYNT. Do you do that to try to get those cows to produce contented milk?

Mr. SELTZER. As a matter of fact, the farmers say they do a better job when they listen to WCOJ, Mr. Flynt.

The CHAIRMAN. From whom do you get the most complaints—the farmers or the cows?

Mr. AVERY. I wonder why you pick out that magic hour of 7 o'clock. That is moot, anyhow, at this time of the year because sunrise occurs before 7 o'clock. The bill we have before the committee would not even touch 7 o'clock in the morning this time of the year. In fact, there are only 5 months out of the year that this bill would even touch.

Mr. SELTZER. Well, 5 months out of the year, sir, is quite a big segment of the year. And I will not say there are not some days even right now when we do not experience some interference in West Chester, for instance.

Mr. AVERY. I mention that because you have invited us up to hear what is happening right now. This bill would not affect broadcast at 7 in the morning. That would continue even though the bill were not to pass.

Mr. SELTZER. I think that you would find enough right now to come to some conclusions about it.

Mr. AVERY. Well, not at 7 o'clock in the morning, I do not believe, Mr. Seltzer, because this bill would not even touch what goes on at 7 o'clock in the morning this time of year.

Mr. FLYNT. One thing more, Mr. Seltzer. You talk about entertaining the cows between 6:30 and 7 o'clock in the morning. I do not know what time they complete the milking up there, but down in my part of the country, and on my own farm, they would have to have a mighty powerful receiving set, with volume turned way up, because by 7 o'clock in the morning the cows would already be milked and be back out in the pasture.

Mr. SELTZER. I think actually in my area, sir, it does differ, because some of them start at 4, but some of these guys call me up about

not getting the market reports, for instance, in the 6 to 7 o'clock portion of our program. If we do not put them on we catch the devil from them. So there must be some farmers in the barns at that time.

Mr. FLYNT. One thing more. I do not think anybody has advocated any permanent rulemaking procedure or legislation which would disrupt normal broadcast activities. I am certain that nobody has advocated any rulemaking procedure or legislation which would in any way harm the public interest.

As I understand it, the primary question before us, certainly the way this member of the subcommittee sees it, is a question of whether to authorize or perhaps even to direct a test period on a scale widespread and large enough to answer these questions with finality, instead of leaving us hanging by perhaps a tenuous thread, on theory advanced by both sides of this particular controversy.

Would you have any objection to a fair and impartial test period?

Mr. SELTZER. None at all. I would welcome it, as a matter of fact. The only thing I was pointing out here, Mr. Flynt, is that actually you have that test every day now in the morning, and I do not think any engineer on any side of the fence—although most of them are on the side of the fence for the status quo in this case—I think that they will corroborate the fact that what happens in the morning is merely duplicating what happens in the afternoon. So that if any of you gentlemen want to turn a radio on right here at Washington, D.C., at 6 o'clock in the morning, you can make your test.

Mr. FLYNT. Is it equally important to have this test apply to the late afternoon period, as well as to the early morning period?

Mr. SELTZER. If you feel that there might be any difference, I think that it would be worth doing. I think that none of the engineers would say that there would be any difference.

Mr. FLYNT. I am glad that you give us credit for believing that what we should decide will be in the public interest. I certainly hope that it will. But the concluding clause of your statement to me seems to be a conclusion of yours. And it is to determine the validity of the conclusion at which you have arrived, as compared with the conclusion of the Daytime Broadcasters Association, to determine which is right. And it would seem to me that any fairminded person, whether a member of this subcommittee, a member of the Federal Communications Commission, or a member of the staff of that Commission, as well as those of you who are part of the broadcast industry, would welcome a fair and impartial test on a scale widespread enough to determine what the true facts are, rather than leave us wholly within the realm of speculation.

Mr. SELTZER. That is absolutely right, sir.

Mr. FLYNT. Thank you, Mr. Chairman.

Mr. YOUNGER. The engineers tell us that the interference starts about 2 hours before sunset. Do you, in your territory, experience any interference during that period?

Mr. SELTZER. Well, not by the quite logical standards which have been set up by the FCC. I mean, if I go way out toward the edge of Philadelphia, I can experience that at the time you mention, Mr. Younger; but for practical purposes in the area which I must and should serve, I do not; no.

Mr. YOUNGER. You make one statement here that I do not quite understand. You say:

> The advertising agencies on Madison Avenue think that the Indians are still skulking around in the bushes and only a small part of our volume comes from this source.

Do you mean from the Indians or Madison Avenue?

Mr. SELTZER. From Madison Avenue.

The CHAIRMAN. Mr. Avery?

Mr. AVERY. I have no further questions.

I would just like to tell you, Mr. Seltzer, that, although I do not agree with everything you have said, I was very much interested in your statement. Certainly you are a fine example of free enterprise personified in the United States of America.

Mr. SELTZER. Thank you. I am very proud to be a part of that, sir. I think a great deal of that system, which is why I did it.

The CHAIRMAN. I do not suppose you object to entertaining cows, do you?

Mr. SELTZER. I find them very good listeners. They never complain. They never write letters in—like the farmers do sometimes.

The CHAIRMAN. You approach this thing, I imagine, here—which I would like to compliment you on—as purely a commercial proposition, do you not?

Mr. SELTZER. Not at all. No; I would not say that.

The CHAIRMAN. You said the plain facts are that if they were permitted to operate until 6 o'clock at certain times of the year it would interfere with your own operation. And you give an example of one 15-minute program being taken away from you because a man could not hear it 10 miles away.

Mr. SELTZER. Well, Mr. Harris, in my business, I am very fortunate in that the commercial and public service aspects are all part and parcel of the same thing. They go hand in hand. The better job of public service I do, the more business I get. And I am in business, like anybody else, to show a profit, like any business is in the United States.

At the same time, I am fortunate in that I am in a business where I can do a great deal of public service, and do every day, every hour. And my ability to make money and my ability to perform that public service, both of which often coincide, would be abridged.

The CHAIRMAN. Thank you very much, Mr. Seltzer, for your presentation here today.

Mr. SELTZER. Thank you, sir.

The CHAIRMAN. It will be necessary for the committee to adjourn. We have four additional witnesses. I think we will adjourn until 10 o'clock in the morning, when the subcommittee can, I think, hear the other witnesses; perhaps in another room, but we will try to get to those who want to testify.

The committee will adjourn until that time.

(Whereupon, at 3:15 p.m., the subcommittee was adjourned, to reconvene at 10 a.m., Thursday, June 16, 1960.)

DAYTIME BROADCAST STATIONS

THURSDAY, JUNE 16, 1960

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON COMMUNICATIONS AND POWER
OF THE COMMITTEE ON INTERSTATE AND FOREIGN COMMERCE,
Washington, D.C.

The subcommittee met at 10 a.m., pursuant to recess, in room 1334 of the New House Office Building, Hon. Oren Harris (chairman) presiding.

The CHAIRMAN. The committee will come to order.

The first witnesses this morning will be Mr. Russell Eagan, attorney, and, I observe, Gayle L. Gupton, the director of Clear Channel Broadcasting Service here in Washington. Are you to testify together?

STATEMENT OF R. RUSSELL EAGAN, COUNSEL, CLEAR CHANNEL BROADCASTING SERVICE

Mr. EAGAN. No, sir. It was the thought that I would present the statement and if you had any questions we have present not only myself, but Mr. Reed T. Rollo of our firm and Mr. George F. Leydorf, who is a consulting engineer. The idea, sir, was that I would present the testimony. We have these other gentlemen here in case you wish to ask any questions that evolve into their field rather than my field.

The CHAIRMAN. Are you Mr. Eagan?

Mr. EAGAN. Yes, sir.

The CHAIRMAN. I observe then that you are the one who is going to present the testimony.

Mr. EAGAN. Yes, sir.

The CHAIRMAN. These other gentlemen are just here to answer questions, is that true?

Mr. EAGAN. Yes, sir.

The CHAIRMAN. And they do not expect to present a formal statement?

Mr. EAGAN. No, sir.

The CHAIRMAN. Very well then. You may proceed.

Mr. EAGAN. Mr. Chairman and members of the subcommittee, my name is R. Russell Eagan. I am a resident partner in the Washington office of the law firm of Kirkland, Ellis, Hodson, Chaffetz & Masters. Our firm, with which I have been connected since 1927, has represented the Clear Channel Broadcasting Service since about 1934. Mr. John F. DeWitt, Jr., who was scheduled to testify on behalf of the Clear Channel Broadcasting Service is unable to appear here today because of the death recently of a close friend and, accordingly, Mr. Chairman, I ask permission to read portions of Mr. DeWitt's pre-

pared statement. I will attempt to summarize it and request, sir, that the entire statement be inserted in the record following my testimony.

The CHAIRMAN. Mr. DeWitt's statement may be included in the record. However, I observe there is a map that goes along with it. It is in red and blue. Of course, there is no way that we can include the map designating the colors.

Mr. EAGAN. No, sir.

The CHAIRMAN. There might be some other way you could refer to the colors.

Mr. EAGAN. Yes, sir. I have that in mind and at the appropriate time, sir, I will refer to that problem.

The CHAIRMAN. All right.

Mr. EAGAN. I will now proceed, sir, to read portions of Mr. DeWitt's testimony.

My name is John H. DeWitt, Jr. I have a prepared statement in opposition to the pending bills which I plan to read except for the footnotes and the appendixes, which I request be reproduced as though read, which has already been accomplished.

I am president of WSM, Inc., licensee of standard broadcast station WSM and television station WSM–TV, each of which is located in Nashville, Tenn. I appear before you today in my capacity as chairman of the Engineering Committee of the Clear Channel Broadcasting Service, which is usually referred to as CCBS. I have been a member of the CCBS Engineering Committee since its inception in November of 1934 and I have served as chairman since June of 1936.

CCBS is an informal organization of the licensees of independently owned (as distinguished from network owned) class I–A clear channel standard broadcast stations. The CCBS member stations are set forth in the attached appendix A.

In order to set the stage for discussing the various bills which are the subject of this hearing, I believe it would be helpful first to make a brief reference to the standard broadcast allocation plan.

Mr. Chairman, I will not read the entire portion of that. It refers to the well-known fact that back in 1926 there was a breakdown of radio regulations with the result that there was a total blackout of reception in the rural areas and you could not receive a signal that was listenable, except in very close and metropolitan or urban areas, and this is what lead to the creation of the Federal Radio Commission in 1927, which was created by the Federal Radio Act of 1927, and the primary mission assigned by Congress to the Federal Radio Commission, which has since been succeeded by the Federal Communications Commission, was to bring order out of chaos.

Soon after the Federal Radio Commission was created a November 11, 1928, allocation plan. The premises underlying the 1928 allocation plan were based on the unchanging laws of physics and, accordingly, the allocation plan in existence today is similar to the 1928 allocation. Details concerning the present allocation plan and the underlying facts and principles of radio communication may be found in the testimony I gave in July of 1953 before the subcommittee of the Senate Committee on Foreign Relations respecting the 1950 North American Regional Broadcasting Agreement.

Although the November 11, 1928 allocation established 40 U.S. class I–A clear channels (which are frequencies on which only one

station is permitted to operate during nighttime hours) there are today only 24 such frequencies.

Sometimes the number referred to is 25 and that includes the frequency 1030 kilocycles, which in fact has only one station operating on it during nighttime hours and internationally is now classified as a I–A, but domestically in the rules it is still classified as a I–B frequency.

The importance of class I–A clear channel stations is that they are capable of rendering interference-free service to distant rural and remote areas. Notwithstanding this potential, large rural and smalltown areas and populations, and I am now at the top of page 3, do not receive adequate standard broadcast (AM) service. The manner in which radio service can be improved has been the subject of a series of rulemaking hearings before the Federal Communications Commission commencing in 1936, 1938, and 1945, as you know, no doubt, the 1945 hearings, referred to as docket 6741, are still pending before the Commission.

The extent of the present inadequacy of broadcast service may be summarized by referring to the fact that although, as of January 1, 1957, there were 1,875 full-time stations authorized to operate in the United States, over 25½ million people did not receive a single satisfactory nighttime groundwave service. These people reside in what we refer to as white areas which as of January 1, 1957 constituted 57.99 percent of the total land area of the United States. These facts are substantially the same today.

The more than half of the U.S. land area which does not receive a single adequate nighttime groundwave service, and in which over 25½ million people reside is shown on the map attached to my statement as appendix B.

You will notice that we have behind us a large reproduction of this map on the easel and I would like to interpolate here to point out that with respect to this white area 74.8 percent of the land area that is white is located west of the Mississippi River, but 71.3 percent of the white area population resides east of the Mississippi River.

There seems, I believe, to be a misimpression that the white area problem is confined to the great West, and this is not true. The bulk of the white area population resides in the East.

The red areas shown on the map receive only one satisfactory groundwave service whereas the blue areas receive two or more.

Mr. Chairman, in connection with your earlier remarks, when this map is reproduced in the printed hearings, the red will reproduce as a dark color and the blue will reproduce as a gray color and this may be seen on page 102 of the printed hearings held in 1957 before the Senate Select Committee on Small Business, which dealt with the same proposal that is before this committee.

The only nighttime service which is provided to the more than 25½ million people residing in the white areas, and the only choice of services provided to the additional millions who receive only one acceptable nighttime groundwave service, is the skywave service of clear channel stations, which though not as dependable as groundwave service, is the only service that these people have or are likely to have. The only possible way to improve service to the vast underserved areas is through improving skywave service.

It is a physical fact that will be disputed by no one that I know of that you cannot in the 107 standard broadcast frequencies so allocate stations with the result that you are able to provide a groundwave service to all portions of this country. This is a physical impossibility because of the nature of radio propagation at nighttime.

In other words, if you put more stations on during the nighttime all it will do will mutually reduce the groundwave service of the various stations and would create more white area, so the only solution to getting service to these people in distant areas is through means of skywave service. We think the only feasible means of doing this is to preserve the too few remaining U.S. class I–A frequencies and to authorize higher power for the class I–A stations to improve this skywave signal.

Mr. Chairman, Mr. DeWitt had prepared a supplementary statement and we have some charts and I would request your permission to go through this because I think it does explain in a rather graphic way the principles which we are dealing with here, and I would like to ask Mr. George F. Leydorf if he would assist me in pointing out these charts to the committee.

I believe it is well known that standard broadcasting is carried on in a band of frequencies known as the AM band which extends from 535 kilocycles to 1605 kilocycles. Since each station occupies 10 kilocycles of this band, 107 channels or frequencies are aavilable for all classes of standard broadcast stations, and I am reading, sir, from the supplementary statement which is attached to Mr. DeWitt's statement at the end. The 107 channels are divided into three basic types known as clear, regional, and local.

The growth in the number of AM stations authorized in the United States since 1922 has been spectacular. I might mention, as shown in the testimony, that these exhibits are reproduced at pages 81 through 86 of the printed Senate hearings in 1957.

Page 1 of exhibit A demonstrates the amazing growth from 30 stations as of January 1, 1922, to 3,222 stations as of April 10, 1957. As of March 1, 1960, this figure has increased to 3,483. This is based on the total number of stations authorized by the Commission as of that date.

The CHAIRMAN. That means AM stations, does it not?

Mr. EAGAN. It means all AM stations, yes, sir, of all types and varieties.

As shown on page 2 of exhibit A, daytime stations increased in number from 18 stations in 1922 to 1,317 as of April 10, 1957. On March 1, 1960, this figure of 1,317 has increased to 1,588, and again that is the total number authorized as of that date, some of which have not been completely constructed yet.

Page 3 of exhibit A shows how the 1,317 daytime stations were distributed among the different types of channels as of April 10, 1957. You notice that there were 769 assigned to the regional channels and 41 of the 107 standard broadcast channels are regional channels. Somehow, I noticed the first day of these hearings the figure 39 crept in. Actually, it is 41 regional channels. On the foreign clear channels, of which there are 14, 410 as of April 1957 operated on the foreign clear channels; 59 operated on the U.S. I–A channels; 50 operated on the U.S. I–B channels; and 2 operated on the local channels. That

is the distribution in 1957 of the daytime stations among the various classes of channels.

As of March 1, 1960, the total number of daytime stations, as I said, had increased to 1,588 and in addition there were 16 limited time stations, and they were assigned in the following manner: There were 1,016 on regional channels, 461 on the foreign clears, 58 on the U.S. class I–A clears, 67 on the class I–B clears, and 2 on the local class IV channels, so there has been very little change in the type of distribution and the important point, I believe, is that the vast majority, over 60 percent, of all daytime stations operate on regional frequencies.

In order to appreciate the havoc that would be caused by granting extended hours of operation to daytime stations it is necessary to understand the basic behavior of AM radio waves.

Throughout the day or night, all radio stations transmit what are known as electromagnetic waves throughout space. These radio waves consist of two basic types, groundwaves and skywaves. In general, it may be stated that groundwaves, which provide primary service, travel along the surface of the earth and their strength is of a consistent nature day and night, becoming weaker as the distance from the transmitter increases.

Skywaves, which provide secondary service, are propagated into the atmosphere. During the daytime, most of the skywaves are not reflected back to the earth's surface but, as the sun sets, a layer of electrified particles about 65 miles above the earth, technically known as the E layer of the ionosphere, becomes in effect a mirror and reflects most of the skywaves back to the earth. Skywaves are of a variable strength but can travel many hundreds of miles with considerable intensity during the nighttime.

Page 4 of exhibit A shows a surface view of the daytime groundwave signals transmitted by two theoretical standard broadcast stations which are labeled "A" and "B." You will notice that the signal strength of each station's groundwave decreases with distance. This is illustrative and is now drawn to scale. There has been no attempt to portray the fact that the groundwave signals of cochannel stations can cause mutual interference.

Page 5 likewise pictures the daytime groundwave or primary service signals of stations A and B, only it is pictured from a bird's-eye view rather than a surface view.

As shown by page 6, standard broadcast stations at night transmit skywave or secondary signals as well as groundwave or primary signals. This again is a surface view.

The groundwave signal is represented by the more or less vertical red lines pointed out here by Mr. Leydorf and the skywave signals by the lines that go up in the atmosphere and are reflected back to earth.

Page 7, which is a surface view, demonstrates that the nighttime skywave signals transmitted by station A cause interference to the nighttime groundwave signals transmitted by station B.

Page 8 is a surface view showing that the nighttime skywave signals produced by stations A and B cause interference to each others' nighttime groundwave signals.

In other words, skywave signal of each causes interference to the other one's groundwave signal at night.

Page 9 is a bird's-eye view of the information shown on page 8. When more than one station is permitted to operate during the nighttime on the same frequency, it is inevitable that the stations cause interference to each other and that the interference-free groundwave coverage of such stations is smaller during the nighttime than it is during the daytime. The outer ring indicates the daytime coverage and the inner ball depicts the nighttime coverage. In addition, which is not shown on the chart, co-channel stations operated on the same frequency can completely destroy each other's skywave service.

In the case of class I–A clear channel stations, where no other station is permitted to operate on the frequency during the nighttime, there is no shrinkage in the station's groundwave service at night. This fact is shown by page 10 which also demonstrates that the skywave signal of a class I–A station is not interfered with and provides a secondary service.

Because of the vast land area of the United States, it is necessary to have a number of clear channel stations in order to cover at least to some degree the entire country with broadcast signals. Clear channel stations are the only stations capable of providing skywave service extending to distant and remote areas. At present, 25 of the 107 standard broadcast frequencies (including 1030 kilocycles are assigned to class I–A stations. In spite of this, as we pointed out before, there are over 25½ million people living in 57.99 percent of the area of the United States who receive no nighttime groundwave service at all and must rely on clear channel skywave service for their only nighttime radio service.

We believe that the public interest requires that this skywave service be protected and not eliminated by the assignment of additional nighttime stations on clear channel frequencies. In addition, we believe that this skywave service should be improved through the vehicle of increased operating power. At present neither the Communications Act of 1934 nor the international agreements respecting radio proscribe any power limitation, but the rules of the Commission limit clear channel stations to a maximum of 59 kilowatts.

In addition to class I–A clear channel stations, which are the only stations to operate on their respective frequencies during the nighttime, there is a class of stations known as class I–B clear channel stations on which two or more stations are permitted to operate nighttime on the same channel, generally using directional antennas for mutual protection.

In addition, one or more class II stations, which must protect a certain portion of the skywave service of class I–B stations but which receive no protection from class I–B stations, are permitted to operate nighttime on class I–B channels. Twenty-one of the 107 standard broadcast channels (excluding 1030 kilocycles) are allocated to class I–B stations.

To summarize with respect to U.S. clear channels, class I–A and class I–B stations operate on 46 clear channels and are designed to provide service to rural and remote areas during the day and night. In addition, daytime and limited time class II stations operate on class I–B clear channels.

Fourteen of the 107 standard broadcast frequencies are allocated to clear channel use by countries in the North American region other

than the United States. On these frequencies, the United States, with a few exceptions, is authorized to operate class II stations, some of which are full-time and some of which are daytime.

Forty-one of the 107 channels are designated as regional channels on which several regional or class III stations operate nighttime on the same frequency. In view of the fact that some 14 to 26 regional stations operate during the nighttime on each of the 41 regional frequencies, the stations provide no skywave service and the groundwave or primary service area is limited as a result of mutual interference. They are able to render interference-free service to the extent they do because most of them use directional antennas designed to protect each other's service areas. They are extremely complicated and mutually dependent. The daytime proposal would entirely disrupt this delicate and complex pattern that has been built up during the years. As stated above, the greatest percentage of daytime stations operate on regional frequencies.

Six of the 107 channels are designated as local channels on each of which 100 or more local or class IV stations operate simultaneously at night. Like regional stations, local stations provide no skywave service at night and, because of the larger number of stations operating on each frequency, the groundwave or primary service area is more severely limited.

EFFECTS OF DBA PROPOSAL

Having described the behavior of radio waves, we can now turn to exhibit B which depicts the interference effects of the DBA proposal.

Page 1 of exhibit B pictures the fact that during the daytime, daytime stations C and D can operate on the same frequency as unlimited-time station A without undue mutual interference to groundwave service. This picture does not attempt to portray the fact that daytime skywave signals from each station cause interference to the groundwave service of the other two stations during the postsunrise and presunset hours.

In other words, during the normal daytime operation of daytime stations they cause interference during the hours which they now operate.

Page 2 demonstrates that under the existing rules of the Commission, daytime stations C and D must cease operation at local sunset with the result that station A's nighttime groundwave receives no interference from the silent daytime stations but does continue to receive interference from cochannel nighttime stations, in the event it is a regional station or class I–B.

Page 3 shows that if the DBA proposal were carried out and daytime stations C and D were permitted to operate before sunrise and after sunset, present full-time stations, such as station A, would suffer interference to their groundwave service areas not only from cochannel full-time stations which are on their frequencies, but also from daytime stations C and D.

The result would be a further shrinkage in nighttime service areas of full-time stations such as station A. The interference shown to station A represents the type of interference that would be caused during the requested "extended hours" by the 1,016 daytime stations to the 763 full-time stations now operating on the 41 regional channels.

Page 3 also shows that the daytime stations, during the extended hours, would receive interference from each other and from full-time stations such as station A, with the result that the area the daytimers would serve would be extremely small.

Page 4 reveals that it is possible, under certain conditions, to permit distant daytime stations to operate on class I–A frequencies during the daytime. This assumes a geographical separation of at least 1,200 miles. Also, this picture does not attempt to portray the fact that during the early and late daytime hours, skywave signals from daytime and class I–A stations cause mutual interference to groundwave service.

Page 5 demonstrates that at nighttime class I–A stations provide not only as much groundwave service as they do in the daytime (due to the fact no other station operates on the frequency at night) but also provides during the nighttime an additional skywave service to rural and remote areas. The crosses depict the fact that daytime stations under the present rules are required to cease operation at sunset.

Page 6 depicts the situation which would result if daytime stations were permitted to operate "extended hours" requested. Such operations by daytime stations would destroy all of the secondary or skywave service of clear channel stations and severely limit the groundwave service of class I–A stations during the extended hours.

It is thus apparent that daytime stations operating extended hours would substantially degrade existing nighttime radio service to rural and remote America, which service is already admittedly inadequate. Page 6 also shows that the daytime stations operating during the extended hours would receive interference from the clear channel stations and from the stations that are daytime on their own freqeuncy with the result that only small areas would be served by the daytime stations during the requested extended hours, with the result that only small areas would be served by the daytime stations during the requested extended hours.

I would like to return to page 4 of Mr. DeWitt's prepared statement which summarizes the background of the pending bills. I will not read this portion to you, Mr. Chairman, because I believe you are familiar with it.

It points out that the Commission has been presented with the specific question in two very extensive rulemaking proceedings in which all parties were permitted to file their comments, and these comments were thoroughly studied by the Commission and the Commission has decided that it would not be in the public interest to authorize what the daytimers request and the reasons are exhaustively detailed in the two Commission decisions which were submitted in this record by Chairman Ford during the first day of the hearing.

I do not see any purpose in reiterating what is set forth in these Commission decisions. They speak for themselves. I think the essential point is the Commission has given thorough study to the very question that is presented by these bills and, as I pointed out earlier, back in 1927 Congress created the Commission to deal with problems of this precise nature. This is their precise function.

I believe, turning to page 6 of Mr. DeWitt's statement, that the short summary he gave as the background of the pending bills estab-

lishes conclusively that the subject matter of the proposed legislation has been studied thoroughly by the expert agency created by Congress to deal with radio allocation matters, and that the agency has decided correctly, that operation of daytime stations from 6 a.m. to 6 p.m. throughout the year would be contrary to the public interest.

Shipping down to the last paragraph on page 6, there has been a mistaken impression that the "6 to 6" proposal would adversely affect only the clear channel stations. Nothing could be further from the truth. Although millions of people who rely on clear channel service would lose this service during portions of the year if the DBA "6 to 6" proposal were adopted, relatively greater harm would be done to regional stations and their listeners as over 60 percent of the daytime stations authorized as of March 1, 1960 operated on the 41 regional channels to which 763 full-time regional stations are assigned.

The interference which would be caused to all types of stations and the net loss of service which would result if the "6 to 6" proposal were adopted is set forth in the Commission's July 8, 1959 report terminating its "notice of inquiry" in docket 12729 respecting the DBA "6 to 6" proposal (18 Pike and Fischer R.R. 1689). This is one of the D–2 decisions that Chairman Ford submitted for the record. The interference which would be caused to CCBS member stations and the net loss in service which would result is set forth in detail in the CCBS opposition comments filed with the Commission May 8, 1959, in docket 12729.

Mr. Chairman, I have a few copies of this document with me and I would be happy to submit them for the record, should the chairman so desire.

The CHAIRMAN. We will receive it for the files. I am not going to include it in the record.

Mr. EAGEN. Yes, sir.

The overriding reason, Mr. Chairman, why the pending bills should not be enacted into law is that operation of daytime stations from 6 a.m. to 6 p.m. would deprive large underserviced areas and publications of existing primary and secondary services and would provide new primary services to relatively smaller well-served areas and populations.

The statement of Mr. DeWitt indicates the main reasons dictating against authorization of "6 to 6" proposal and they are set forth and I will not take your time, sir, to read them.

I would like, if I may, sir, to make a few comments with respect to the matters that were brought forth during the 3 days of hearings which I listened to the first part of this week. I think one thing that has to be borne in mind is the statement that I made earlier that it is impossible physically to provide groundwave service to every person in the country, and under existing conditions we have this large white area population that must depend on skywave service for their only nighttime service, and the cold, hard engineering facts, of which there is no doubt whatsoever, is that if you put additional stations on at night it is going to create a larger white area so it will increase the problem rather than solve it.

For example, if Mr. Livesay's station in Mattoon were permitted to operate during a portion of the nighttime hours as suggested by this

bill, we do not deny that there would be a few people in the immediate vicinity of Mattoon that would receive a service that they are now not getting, and this is all to the good and if this were the only fact involved nobody would be against it, but the fact is that in order to provide this service to these few people in the immediate vicinity of Mattoon, some of which are farmers, the price that would have to be paid is that many more people, most of whom would be farmers, would be deprived of service they are getting now and in most instances they would be deprived of the only service, so it is a question of balancing interests of the people. It is not a question of balancing the interests of the individual stations concerned and it just is contrary to the public interest to do something that would bring service to a few people at the expense of taking away vitally needed service for many, many more people, and that, I believe, is what this matter resolves itself down to.

When Dillard testified he did not deny, and never has denied, this interference would be caused. I think it is accurate to say that he has made statements with respect to this or that aspect that maybe has a slightly different view on some of the engineering assumptions, but what is the end result? None of these slightly different views that he has disturbs one bit the important overall conclusion that interference would result, and Mr. Dillard has never disputed and no engineer has ever disputed that more people would lose service than would gain service.

I do not know of a single engineer that has ever made that [illegible]n and DBA has never presented the figures that they maintain would result in the way of gains and losses and they have never attacked showings made by CCBS that I know of as far as the end result goes. They have never said CCBS says the gain would be X and the loss Y, whereas really it should be this and that. They have never done that.

One thing I would like to mention is Mr. Dillard made reference, you will recall I believe, to a map dealing with KFI, and it was printed in these Senate hearings in 1957. Maybe I was mistaken, but I got the impression that it was stated that this map was inaccurate in some respect and did not depict factually what it purported to represent, and if that was the impression received I believe, sir, that is an erroneous one, because the map that Mr. Dillard referred to, and this is set forth clearly in the record that he referred to, is a map prepared by the Federal Communications Commission and it depicts what would happen at the second hour after sunset in the event daytime stations on KFI's frequency were permitted to operate.

I do not understand Mr. Dillard to quarrel with the fact that that is what would happen at that time. I did get the impression that maybe he thought that that map was supposed to depict what would happen at 1 hour after sunset rather than 2 hours after sunset, but that map was not presented by the Commission for that purpose.

In our comments we filed with the Commission, if we had a situation where we were depicting interference conditions and the time involved was 1 hour after sunset rather than 2 hours, we depicted the situation as of 1 hour and not 2 hours, so we adjusted, and Mr. Dillard, you remember, made the point that at 1 hour after sunset KFI's skywave would not have built up to the point shown in the map that he referred to. We do not dispute that, and nobody has ever claimed it would. If we showed in our comments before the Commission con-

ditions at 1 hour after sunset, we showed the skywave service that actually existed at that time, and it is all set forth in the record in the document that I just referred to, and I would just like to point out one statistic from that.

In connection with KFI, if the daytime stations on its frequency were permitted to operate up to 6 p.m. in December and start at 6 a.m. in the morning, there would be a gain in area of 7,513 square miles, and there would be a loss of 568,445 square miles.

In terms of population, 765,165 people would get a new service, but 1,569,540 people would lose service, and those are conditions that are 1½ hours prior to sunrise.

Two other brief points, sir.

Mr. Dillard also referred to the fact that WOI has been operating for some time under special service authority prior to sunrise at its local time. This, too, is a fact, but it is also a fact, sir, that KFI has objected to this before the Commission because of the interference that we say has happened because of this, and this is a pending adjudicatory case before the Comission; so, obviously I have no desire to comment on the merits of that pending case other than to refer to the fact that it has been objected to.

As for the suggestion, sir, that there be a test performed, I agree with the comments expressed by Chairman Ford at the Commission that basically there is no need for a test, because we know what is going to happen. We had one experience in this situation in 1926 when everybody operated at nighttime hours without any regulation, and the result was utter chaos beyond the immediate city limits of cities that had stations, and this would happen again, and, as far as the practicability of any test, I have not heard any precise suggestions as to how it should be conducted. There are many problems involved, one of which is that all of these daytimers that are on foreign clear channels cannot be authorized even by a test, I do not believe, sir, to operate during these hours without violating international agreements to which this country is a party, and this would also apply, I believe, to certain daytime stations on regional channels, because they are required under the treaty also to adhere to certain protection requirements to regional channels, and I think the fact also is that, like Mr. Seltzer mentioned, it could be that, if more practical information is desired, tests and conditions could be found out easily by listening to any local station that is in operation now at night.

Just go a few miles beyond the city and you cannot hear it. It is because of this interference. And also the Commission could run down the facts—nobody knows the facts—as to how many of these daytime stations are operating under this special rule prior to local sunrise, and nobody has the facts as to how many of the regional stations have objected to the interference that is caused by this operation, and this matter could be tested in the sense that they could find out in detail what is going on. I do know that certain regional stations have objected to daytime stations commencing during these early hours because of the interference that would be caused and I know in a recent case this was documented with respect to WAKR, in Akron, Ohio.

That is all I have, sir.

(Mr. DeWitt's statement referred to above follows:)

STATEMENT OF JOHN H. DEWITT, JR.

I. INTRODUCTORY

Mr. Chairman and members of the subcommittee, my name is John H. DeWitt, Jr. I have a prepared statement in opposition to the pending bills which I plan to read except for the footnotes and the appendixes, which I request be reproduced as though read.

I am president of WSM, Inc., licensee of standard broadcast station WSM and television station WSM–TV, each of which is located in Nashville, Tenn. I appear before you today in my capacity as chairman of the engineering committee of the Clear Channel Broadcasting Service, which is usually referred to as CCBS. I have been a member of the CCBS engineering committee since its inception in November of 1934 and I have served as chairman since June of 1936.

CCBS is an informal organization of the licensees of independently owned (as distinguished from network owned) class I–A clear channel standard broadcast stations. The CCBS member stations are set forth in the attached appendix A.

In order to set the stage for discussing the various bills which are the subject of this hearing, I believe it would be helpful first to make a brief reference to the standard broadcast allocation plan.

Prior to the Radio Act of 1927 and the creation of the Federal Radio Commission in 1927,[1] there was a period, known as the chaos of 1926, when for all practical purposes, any citizen of this country could operate a radio station on any frequency in the standard broadcast band with any power he desired. The result was utter chaos and a blackout of radio reception in the vast rural and smalltown areas of the country. Soon after its creation, and after consulting the leading engineers of that time, the Commission promulgated its November 11, 1928, allocation plan which set forth specific standards governing the use of standard broadcast frequencies. The premises underlying the 1928 allocation were based on the unchanging laws of physics and, accordingly, the allocation plan in existence today is similar to the 1928 allocation. Details concerning the present allocation plan and the underlying facts and principles of radio communication may be found in the testimony I gave in July of 1953 before the subcommittee of the Senate Committee on Foreign Relations respecting the 1950 North American Regional Broadcasting Agreement.[2]

Although the November 11, 1928, allocation established 40 U.S. class I–A clear channel frequencies (frequencies on which only one station is permitted to operate during nighttime hours) there are only 24 such frequencies remaining today.[3]

The importance of class I–A clear channel stations is that they are capable of rendering interference-free service to distant rural and remote areas. Notwithstanding this potential, large U.S. rural and smalltown areas and populations do not receive adequate standard broadcast (AM) service. The manner in which radio service can be improved has been the subject of a series of rulemaking hearings before the Federal Communications Commission commencing in 1936, 1938, and 1945. The 1945 hearings (docket 6741) are still pending before the Commission.

The extent of the present inadequacy of broadcast service may be summarized by referring to the fact that although, as of January 1, 1957, there were 1,875 full-time stations authorized to operate in the United States, over 25½ million people did not receive a single satisfactory nighttime groundwave service. These people reside in what we refer to as white areas, which as of January 1, 1957, constituted 57.99 percent of the total land area of the United States. These facts are substantially the same today.[4]

---

[1] The Radio Act of 1927 was replaced by the Communications Act of 1934, and the Federal Radio Commission was succeeded by the Federal Communications Commission on July 11, 1934.

[2] See pp. 69–76 of the printed hearings.

[3] One of the 24 class I–A frequencies (770 kilocycles) is, in fact, not "clear" and one frequency (1030 kilocycles) designated in the FCC rules as a class I–B is, in fact, "clear" and is classified as a class I–A frequency under the 1950 NARBA and the 1957 Mexican agreement. The 16 class I–A clear channels which were broken down since 1928 are now either class I–B frequencies or class III (regional) frequencies, on which from 13 to 25 stations operate full time at night.

[4] Although the number of full-time stations increased between May 1, 1947, and Jan. 1, 1957, from 1,339 to 1,875, there was only an insignificant decrease in the amount of white area (60.59 percent to 57.99 percent) and there was an increase in the white area population (from 23.2 million to 25.6 million). As of Mar. 1, 1960, there were 1,879 full-time stations.

The more than half of the United States land area which does not receive a single adequate nighttime groundwave service and in which over 25½ million people reside is shown on the map attached to my statement as appendix B. The red areas shown on the map receive only one satisfactory groundwave service whereas the blue areas receive two or more. The only nighttime service provided to the more than 25½ million people residing in the white areas, and the only choice of services provided to the additional millions who receive only one acceptable nighttime groundwave service, is the skywave service of clear channel stations, which though not as dependable as groundwave service, is all those people have or are likely to have.

The only possible way to improve service to the vast underserved areas is through improving skywave service. The only feasible means of doing this is through preserving the too few remaining U.S. class I–A frequencies and authorizing higher power for class I–A stations.[5]

If you wish, I am prepared to digress from my prepared statement and to read a supplementary statement which explains in more detail the basic facts concerning radio propagation and the allocation of standard broadcast frequencies.

II. BACKGROUND OF THE PENDING BILLS

One of the issues (No. 7) specified in the 1945 notice which initiated the still pending *Clear Channel* case (docket 6741) was directed to whether there should be any change in the hours of operation for class II daytime stations which, like all daytime stations, are licensed to operate from local sunrise to local sunset. An organization known as the Daytime Broadcasters' Association (DBA), whose members have never been identified,[6] petitioned the Commission in the spring of 1954 to amend its rules so as to authorize all daytime stations to operate from 5 a.m. to 7 p.m. regardless of the times of local sunrise and local sunset. On May 13 and December 8, 1955, DBA amended its petition and on December 19, 1957, the Commission initiated a separate rulemaking proceeding with respect to the DBA proposal (docket 12274). CCBS and 59 other broadcast stations[7] filed comments in opposition to the DBA proposal, emphasizing that many more people would lose service than would gain service if the proposal were adopted. While the matter was being considered by the FCC, the DBA "5 to 7" proposal was the subject of hearings held in April of 1957 before a subcommittee of the Senate Select Committee on Small Business. The opposition of CCBS to the DBA "5 to 7" proposal was presented during the Senate hearings by Mr. Hollis M. Seavey, then director of CCBS, who has since been succeeded by Mr. Gayle Gupton.

The end result of the FCC proceedings and the Senate hearings was that the Commission on September 19, 1958, released a report and order which denied the DBA "5 to 7" proposal and exhaustively detailed the reasons why the public interest, convenience, and necessity required that action. The report and order may be found in 17 Pike and Fischer R.R. 1669.

On January 12, 1959, the Commission, in response to a request by DBA, initiated a notice of inquiry as to whether a rulemaking proceeding should be instituted looking toward authorizing the operation of all daytime stations from 6 a.m. to 6 p.m. regardless of the times of local sunrise and local sunset (FCC docket 12729). The January 12, 1959, notice of inquiry, which appears at 24 F.R. 375, should be reproduced as a part of this record as it shows on its face the thoroughness of the Commission's inquiry into the feasibility of the DBA "6 to 6" proposal. While this proceeding was pending before the FCC, Congressman Shipley introduced H.R. 6676 on April 27, 1959, one of five identical bills

[5] The Communications Act of 1934 and all existing and international agreements do not set any maximum power limitation for class I–A clear-channel stations. At present, the Commission's rules provide that the minimum and maximum power for class I–A stations is 50 kilowatts. The Commission is considering the question of what changes should be made in the existing standard broadcast allocation plan in pending docket 6741, the *Clear Channel* case.

[6] During the hearings before the subcommittee of the Select Committee on Small Business of the U.S. Senate, which were held on Apr. 29 and 30, 1957, Mr. J. R. Livesay who identified himself as the "chairman of the board of the organization known as the Daytime Broadcasters Association," testified that the organization represented "some 150 daytime radio stations scattered throughout the United States." As of Mar. 1, 1960, there were a total of 1,588 daytime stations and 16 limited-time stations operating or authorized to operate throughout the United States. Therefore, a best, DBA represents only in the order of 10 percent of the daytime stations.

[7] Listed on p. 108 of hearings held in April of 1957 before a subcommittee of the Senate Select Committee on Small Business.

which are the subject of this hearing. CCBS and some 180 stations filed comments before the Commission showing why the public interest required denial of the DBA "6 to 6" proposal. Only 10 stations, in addition to DBA, filed comments in support of the "6 to 6" proposal. After carefully considering all of the comments, the Commission on July 8, 1959, released a report rejecting the "6 to 6" proposal. In short, the Commission concluded that the "6 to 6" proposal was contrary to the public interest as it would take away service from many people in dire need of it in order to provide service to significantly fewer people residing in well served areas. The July 8, 1959, report may be found at 18 Pike and Fischer R.R. 1689.

III. THE PENDING BILLS SHOULD NOT BE ENACTED INTO LAW

The short summary of the background of the pending bills establishes conclusively that the subject matter of the proposed legislation has been studied thoroughly by the expert agency created by Congress to deal with radio allocation matters and that the agency has decided that operation of daytime stations from 6 a.m. to 6 p.m. would be contrary to the public interest. The reasons why the DBA "6 to 6" proposal, as embodied in the pending bills, should be rejected by Congress are thoroughly documented in the FCC decisions on the DBA "5 to 7" and "6 to 6" proposals, which are set forth at 17 Pike and Fischer R.R. 1669 and at 18 Pike and Fischer R.R. 1689. It is of interest that DBA never exercised its statutory right of appeal to the courts.

There has been a mistaken impression that the "6 to 6" proposal would adversely affect only the clear channel stations. Nothing could be further from the truth. Although millions of people who rely on clear channel service would lose this service if the DBA "6 to 6" proposal were adopted, relatively greater harm would be done to regional stations and their listeners as over 60 percent of the daytime stations authorized as of March 1, 1960, operated on the 41 regional channels to which 763 full-time regional stations are assigned.[8] The interference which would be caused to all types of stations and the net loss of service which would result if the "6 to 6" proposal were adopted is set forth in the Commission's July 8, 1959, report terminating its notice of inquiry in docket 12729 respecting the DBA "6 to 6" proposal (18 Pike and Fischer R.R. 1689). The interference which would be caused to CCBS member stations and the net loss in service which would result is set forth in detail in the CCBS opposition comments filed with the Commission May 8, 1959, in docket 12729. I have with me a few copies of this document which I would be happy to furnish to the committee. I would appreciate it if the document could be reproduced in the printed record following my testimony.

The overriding reason why the pending bills should not be enacted into law is that operation of daytime stations from 6 a.m. to 6 p.m. would deprive large underserviced areas and populations of existing primary and secondary services and would provide new primary services to relatively smaller well-served areas and populations. The main reasons dictating against authorization of "6 to 6" operation may be summarized as follows:

1. The present operation of limited time and daytime stations causes objectionable interference during post-sunrise and pre-sunset hours. Accordingly, any change in the rules should at the very least (*a*) not extend in any way the hours of operation of existing stations and (b) restrict rather than extend the hours of operation of future limited time and daytime stations.

2. Existing international agreements substantially prohibit 461 or 28.74 percent of all daytime and limited time stations from operating before local sunrise or after local sunset.[9]

3. The present operation of all AM stations does not provide a satisfactory service to large areas and populations. Any changes in the AM allocation rules should improve rather than degrade service.

---

[8] As of Mar. 1, 1960, there were 1,588 daytime and 16 limited-time stations assigned to the various types of frequencies as follows: 1,016 or 63.34 percent on 41 regional channels; 461 or 28.74 percent on 14 foreign I–A channels; 67 or 4.17 percent on 21 I–B channels; 58 or 3.62 percent on 25 U.S. I–A channels (includes1030 kc.); 2 or 0.13 percent on 6 class IV channels.

[9] See pars. 9 and 10 of the Commission's notice of inquiry in docket 12729 as to the pertinent provisions of the 1950 NARBA and the 1957 agreement with Mexico. In this connection, it should be noted that DBA unsuccessfully opposed ratification of the 1957 agreement with Mexico.

4. The authorization of pre-sunrise and post-sunset operation, such as from 6 a.m. to 6 p.m., for the presently authorized limited time and daytime stations would further degrade and prohibit any improvement in service. Such authorization for future limited time and daytime stations would be even more devastating.

IV. CONCLUSION

For the foregoing reasons, CCBS respectfully submits that the subcommittee should recommend to the full committee that it refuse to report out any of the pending bills (H.R. 6676, 6868, 8286, 9627, and 10275). The facts are clear and convincing that the DBA "6 to 6" proposal is not in the public interest.

I thank you for the opportunity to present the views of CCBS. If you have any questions, I would be happy to attempt to answer them.

APPENDIX A

CCBS members

Call	Location	Frequency (kilocycles)	Licensee
KFI	Los Angeles, Calif.	640	Earle C. Anthony, Inc.
WSM	Nashville, Tenn.	650	WSM, Inc.
WLW	Cincinnati, Ohio	700	Crosley Broadcasting Corp.
WGN	Chicago, Ill.	720	WGN, Inc.
WSB	Atlanta, Ga.	750	Atlanta Newspapers, Inc.
WJR	Detroit, Mich.	760	WJR, The Goodwill Station, Inc.
WBAP	Fort Worth, Tex.	820	Carter Publications, Inc.
WFAA	Dallas, Tex.	820	A. H. Belo Corp.
WHAS	Louisville, Ky.	840	WHAS, Inc.
WHO	Des Moines, Iowa	1040	Central Broadcasting Co.
WHAM	Rochester, N.Y.	1180	Genesee Broadcasting Corp.
WOAI	San Antonio, Tex.	1200	Southland Industries, Inc.

(NOTE.—The map attached to Mr. DeWitt's statement has been placed in the committee files.)

SUPPLEMENTARY STATEMENT OF JOHN H. DEWITT, JR., ON NATURE OF RADIO PROPAGATION

Standard broadcasting is carried on in a band of frequencies known as the AM band which extends from 535 kilocycles to 1605 kilocycles. Since each station occupies 10 kilocycles of this band, 107 channels or frequencies are available for all classes of standard broadcast stations. The 107 channels are divided into 3 basic types: clear, regional, and local.

The growth in number of AM stations authorized in the United States since 1922 has been spectacular. Page 1 of exhibit A[1] demonstrates the amazing growth from 30 stations as of January 1, 1922, to 3,222 stations as of April 10, 1957, As of March 1, 1960, there were 3,483.

As shown on page 2 of exhibit A, daytime stations increased in number from 18 stations in 1922 to 1,317 as of April 10, 1957. On March 1, 1960, there were 1,588.

Page 3 of exhibit A shows how the 1,317 daytime stations were distributed among the different types of channels as of April 10, 1957. As of March 1, 1960, there were 1,588 daytime stations and 16 limited time stations assigned as follows: 1,016 on regional or class III channels, 461 on foreign clears, 58 on U.S. class I–A clears, 67 on U.S. class I–B clears, and 2 on local or class IV channels.

In order to appreciate the havoc that would be caused by granting extended hours of operation to daytime stations, it is necessary to understand the basic behavior of AM radio waves. Here is a simple but accurate explanation of this subject.

Throughout the day and night, all radio stations transmit what are known as electromagnetic waves throughout space. These radio waves consist of two basic types, groundwaves and skywaves. In general, it may be stated that groundwaves, which provide primary service, travel along the surface of the earth

[1] Exhibits A–1 through A–10 appear on pp. 81–86 of the printed hearings on the DBA "5 to 7" proposal held in April of 1957 before a subcommittee of the Senate Select Committee on Small Business.

and their strength is of a consistent nature day and night, becoming weaker as the distance from the transmitter increases. Skywaves, which provide secondary service, are propagated into the atmosphere. During the daytime, most of the skywaves are not reflected back to the earth's surface but, as the sun sets, a layer of electrified particles about 65 miles above the earth, technically known as the E layer of the ionosphere, becomes in effect a mirror and reflects most of the skywaves back to the earth. Skywaves are of a variable strength but can travel many hundreds of miles with considerable intensity during the nighttime.

Page 4 of exhibit A shows a surface view of the daytime groundwave signals transmitted by two theoretical standard broadcast stations which are labeled "A" and "B." You will notice that the signal strength of each station's groundwave decreases with distance. This is illustrative and is not drawn to scale. There has been no attempt to portray the fact that the groundwave signals of cochannel stations can cause mutual interference.

Page 5 likewise pictures the daytime groundwave or primary service signals of stations A and B, only it is pictured from a bird's-eye view rather than a surface view.

As shown by page 6, standard broadcast stations at night transmit skywave or secondary signals as well as groundwave or primary signals. This again is a surface view.

Page 7, a surface view, demonstrates that the nighttime skywave signals transmitted by station A cause interference to the nighttime groundwave signals transmitted by station B.

Page 8 is a surface view showing that the nighttime skywave signals produced by stations A and B cause interference to each other's nighttime groundwave signals.

Page 9, is a bird's-eye view of the information shown on page 8. Where more than one station is permitted to operate during the nighttime on the same frequency, it is inevitable that the stations cause interference to each other and that the interference-free groundwave coverage of such stations is smaller during the nighttime than it is during the daytime. The outer ring indicates the daytime coverage and the inner ball depicts the nighttime coverage. In addition, cochannel stations can completely destroy each other's skywave service.

In the case of class I–A clear channel stations, where no other station is permitted to operate on the frequency during the nighttime, there is no shrinkage in the station's groundwave service at night. This fact is shown by page 10 which also demonstrates that the skywave signal of a class I–A station is not interfered with and provides a secondary service.

Because of the vast land area of the United States, it is necessary to have a number of clear channel stations in order to cover at least to some degree the entire country with broadcast signals. Clear channel stations are the only stations capable of providing skywave service extending to distant and remote areas. At present, 25 of the 107 standard broadcast frequencies (including 1030 kilocycles) are assigned to class I–A stations.

In spite of this, there are today over 25½ million people living in 57.99 percent of the area of the United States who receive no nighttime groundwave service at all and must rely on clear channel skywave service for their only nighttime radio service. We believe that the public interest requires that this skywave service be protected and not eliminated by the assignment of additional nighttime stations on clear channel frequencies. In addition, we believe that this skywave service should be improved through the vehicle of increased operating power. At present neither the Communications Act of 1934 nor the international agreements respecting radio proscribe any power limitation, but the rules of the Commission limit clear channel stations to a maximum of 50 kilowatts.

In addition to class I–A clear channel stations, which are the only stations to operate on their respective frequencies during the nighttime, there is a class of stations known as class I–B clear channel stations on which two or more stations are permitted to operate nighttime on the same channel, generally using directional antennas for mutual protection. In addition, one or more class II stations, which must protect a certain portion of the skywave service of class I–B stations but which receive no protection from class I–B stations, are permitted to operate nighttime on class I–B channels. Twenty-one of the 107 standard broadcast channels (excluding 1030 kilocycles) are allocated to class I–B stations.

To summarize with respect to U.S. clear channels, class I–A and class I–B stations operate on 46 clear channels and are designed to provide service to rural and remote areas during the day and night. In addition, daytime and

limited time class II stations operate on class I–A and class I–B clear channels and full-time class II stations operate on class I–B clear channels.

Fourteen of the 107 standard broadcast frequencies are allocated to clear channel use by countries in the North American region other than the United States. On these frequencies, the United States, with a few exceptions, is authorized to operate class II stations, some of which are full time and some of which are daytime.

Forty-one of the 107 channels are designated as regional channels on which several regional or class III stations operate nighttime on the same frequency. In view of the fact that some 14 to 26 regional stations operate during the nighttime on each of the 41 regional frequencies, the stations provide no skywave service and the groundwave or primary service area is limited as a result of mutual interference. They are able to render interference-free service to the extent they do because most of them use directional antennas designed to protect each other's service areas. They are extremely complicated and mutually dependent. The daytime proposal would entirely disrupt this delicate and complex pattern that has been built up during the years. As stated above, the greatest percentage of daytime stations operate on regional frequencies.

Six of the 107 channels are designated as local channels on each of which 100 or more local or class IV stations operate simultaneously at night. Like regional stations, local stations provide no skywave service at night and, because of the larger number of stations operating on each frequency, the groundwave or primary service area is more severely limited.

EFFECTS OF DBA PROPOSAL

Having described the behavior of radio waves, we can now turn to exhibit B[2] which depicts the interference effects of the DBA proposal.

Page 1 pictures the fact that during the daytime, daytime stations C and D can operate on the same frequency as unlimited-time station A without undue mutual interference to groundwave service. This picture does not attempt to portray the fact that daytime skywave signals from each station cause interference to the groundwave service of the other two stations during the postsunrise and presunset hours.

Page 2 demonstrates that under the existing rules of the Commission, daytime stations C and D must cease operation at local sunset with the result that station A's nighttime groundwave receives no interference from the silent daytime stations but does continue to receive interference from cochannel nighttime stations.

Page 3 shows that if the DBA proposal were carried out and daytime stations C and D were permitted to operate before sunrise and after sunset, present full-time stations, such as station A, would suffer interference to their groundwave service areas not only from co-channel full-time stations but also from daytime stations C and D. The result would be a further shrinkage in nighttime service areas of full-time stations such as station A. The interference shown to station A represents the type of interference that would be caused during the requested extended hours by the 1,016 daytime stations to the 763 full-time stations now operating on the 41 regional channels. Page 3 also shows that the daytime stations, during the extended hours, would receive interference from each other and from full-time stations, such as station A, with the result that the area the daytimers would serve would be extremely small.

Page 4 reveals that it is possible, under certain conditions, to permit distant daytime stations to operate on class I–A frequencies during the daytime. This assumes a geographical separation of at least 1,200 miles. Also, this picture does not attempt to portray the fact that during the early and late daytime hours, skywave signals from daytime and class I–A stations cause mutual interference to groundwave service.

Page 5 demonstrates that at night class I–A stations provide not only as much groundwave service as they do in the daytime (due to the fact no other station operates on the frequency at night) but also provide an additional skywave service to rural and remote areas. The crosses depict the fact that daytime stations under the present rules are required to cease operation at sunset.

Page 6 depicts the situation which would result if daytime stations were permitted to operate extended hours. Such operation by daytime stations would

[2] Exhibits B–1 through B–6 are reproduced at pp. 88–91 of the hearings held in April of 1957 on the DBA "5 to 7" proposal before a subcommittee of the Senate Select Committee on Small Business.

destroy all of the secondary or skywave service of clear channel stations and severely limit the groundwave service of class I–A stations during the extended hours. It is thus apparent that daytime stations operating during extended hours would substantially degrade existing nighttime radio service to rural and remote America, which service is already admittedly inadequate. Page 6 also shows that the daytime stations operating during the extended hours would receive interference from the clear channel stations with the result that only small areas would be served by the daytime stations during the requested extended hours.

The CHAIRMAN. Mr. Younger?

Mr. YOUNGER. Just one question. On page 5, you say:

Like regional stations local stations provide no skywave service at night * * *.

Do you mean that the local stations, even if operated at night, create no skywave?

Mr. EAGAN. Sir, they create it, but they do not provide what we call a skywave service because the skywave service that each station sends out cancels out the listenability of the other one's skywave service. They mutually destroy each other as well as mutually destroying portions of each other's groundwave service, so they send it out, but it does not result in any signal that can be listened to.

Mr. YOUNGER. That is all.

The CHAIRMAN. Mr. Eagan, as an appendix to Mr. DeWitt's statement, I observe the members of your organization, do I not?

Mr. EAGAN. Yes, sir; appendix A.

The CHAIRMAN. In other words, Clear Channel Broadcasting Service is an association, is it?

Mr. EAGAN. Yes, sir. It is an informal association of these class I–A stations that are listed on appendix A. The eligibility requirements to become a member of CCBS are twofold; in essence, that it be, as I stated, an independently owned, as distinguished from a network owned, clear channel station, and that the station have an interest in preserving the channel as clear. Those are the two main requirements for membership. This does not constitute representation, you understand, of all class I–A stations. There are other class I–A stations who are not members of our organization.

The CHAIRMAN. You testified there are 24 and some question about the 25th clear channel station.

Mr. EAGAN. Yes, sir; some of which are owned by networks.

The CHAIRMAN. And you only have 12 of those as a part of your association?

Mr. EAGAN. That is correct, sir.

The CHAIRMAN. Is the reason the others are not a part of your group because they are network owned?

Mr. EAGAN. That accounts for a certain number of them, but not all of them. KSL, I believe, in Salt Lake City has always adhered to the same views and for reasons that they have they did not wish to join an organization. I do not think that it represents any difference in viewpoint as to anything concerned in this hearing or in the *Clear Channel* case itself.

The CHAIRMAN. Well, as the record shows here, then, you only are representing about half of the clear channel stations?

Mr. EAGAN. That is correct; yes, sir.

Mr. Chairman, I have before me in that connection a breakdown of the various stations as of March 1, 1960, in terms of number of stations

assigned to the various types of channels, and attached to it is a breakdown with respect to each specific frequency involved, and I believe it might be of some assistance to make this part of the record.

The CHAIRMAN. I would like to have it. Let me see a copy of it.

(The table follows:)

Number of daytime, limited, and unlimited time stations within the continental limits of the United States as of Mar. 1, 1960 [1]

Class of channel	Number of channels	Number limited time	Number daytime	Number unlimited	Total
United States I–A	25	13	45	26	84
Canadian I–A	7	0	183	35	218
Mexican I–A	6	0	265	2	267
Bahamas I–A	1	0	13	6	19
United States I–B	19	3	52	106	161
Foreign I–B	2	0	12	11	23
Regional	41	0	1,016	763	1,779
Local	6	0	2	930	932
Total	107	16	1,588	1,879	3,483

[1] Based on official list for information setting forth notified assignments of standard broadcast stations of the United States as of Mar. 1, 1960. Includes stations under construction as of Mar. 1, 1960. The frequencies are those on which they are presently operating.

United States I–A

	Frequency	Limited	Day	Unlimited	Total
1	640	1	2	1	4
2	650	0	1	1	2
3	660	0	3	1	4
4	670	0	0	1	1
5	700	0	0	1	1
6	720	0	0	1	1
7	750	3	3	1	7
8	760	0	1	1	2
9	770	1	2	2 (KOB)	5
10	780	1	4	1	6
11	820	2	1	1	4
12	830	1	1	1	3
13	840	0	3	1	4
14	870	1	5	1	7
15	880	0	2	1	3
16	890	0	2	1	3
17	1020	1	2	1	4
18	1030	0	1	1	2
19	1040	0	1	1	2
20	1100	1	3	1	5
21	1120	0	3	1	4
22	1160	1	0	1	2
23	1180	0	1	1	2
24	1200	0	0	1	1
25	1210	0	4	1	5
Total		13	45	26	84

Canadian I–A

	Frequency	Limited	Day	Unlimited	Total
1	540	0	11	2	13
2	690	0	14	5	19
3	740	0	17	7	24
4	860	0	29	4	33
5	990	0	28	9	37
6	1,010	0	27	6	33
7	1,580	0	57	2	59
Total		0	183	35	218

Mexican I–A

	Frequency	Limited	Day	Unlimited	Total
1	730	0	28	0	28
2	800	0	28	0	28
3	900	0	42	0	42
4	1,050	0	54	1	55
5	1,220	0	50	1	51
6	1,570	0	63	0	63
Total		0	265	2	267

Bahamas I–A

	Frequency	Limited	Day	Unlimited	Total
1	1,540	0	13	6	19
Total		0	13	6	19

United States I–B

	Frequency	Limited	Day	Unlimited	Total
1	680	0	4	10	14
2	710	0	2	11	13
3	810	0	4	3	7
4	850	1	0	11	12
5	1000	0	3	3	6
6	1060	0	3	4	7
7	1070	0	2	9	11
8	1080	0	4	5	9
9	1090	0	4	3	7
10	1110	1	3	4	8
11	1130	0	0	5	5
12	1140	0	3	5	8
13	1170	0	1	7	8
14	1190	1	3	4	8
15	1500	0	1	5	6
16	1510	0	6	6	12
17	1520	0	3	4	7
18	1530	0	0	3	3
19	1560	0	6	4	10
Total		3	52	106	161

Foreign I–B

	Frequency	Limited	Day	Unlimited	Total
1	940	0	4	6	10
2	1550	0	8	5	13
Total		0	12	11	23

Regional

	Frequency	Limited	Day	Unlimited	Total
1	550	0	4	18	22
2	560	0	3	17	20
3	570	0	4	14	18
4	580	0	6	13	19
5	590	0	2	18	20
6	600	0	8	15	23
7	610	0	3	16	19
8	620	0	5	17	22
9	630	0	13	13	26
10	790	0	16	19	35
11	910	0	17	25	42
12	920	0	17	23	40
13	930	0	14	22	36
14	950	0	20	18	38
15	960	0	21	20	41
16	970	0	21	19	40
17	980	0	25	14	39
18	1150	0	34	24	58
19	1250	0	32	14	46
20	1260	0	41	20	61
21	1270	0	37	14	51
22	1280	0	34	23	57
23	1290	0	32	22	54
24	1300	0	29	20	49
25	1310	0	29	24	53
26	1320	0	32	21	53
27	1330	0	30	17	47
28	1350	0	33	17	50
29	1360	0	40	20	60
30	1370	0	38	15	53
31	1380	0	30	22	52
32	1390	0	29	22	51
33	1410	0	35	17	52
34	1420	0	37	17	54
35	1430	0	29	19	48
36	1440	0	28	23	51
37	1460	0	33	19	52
38	1470	0	35	17	52
39	1480	0	31	24	55
40	1590	0	47	14	57
41	1600	0	42	17	59
Total		0	1,016	763	1,779

Local

	Frequency	Limited	Day	Unlimited	Total
1	1230	0	1	158	159
2	1240	0	0	141	141
3	1340	0	0	156	156
4	1400	0	0	160	160
5	1450	0	0	161	161
6	1490	0	1	154	155
Total		0	2	930	932

The CHAIRMAN. However, the point is with respect to the clear channel stations, these 24 or 25, whichever it might be, there is no one else assigned to that channel.

Mr. EAGAN. That is at nighttime. That is the essence of an I–A station, yes, sir, in the continental limit of the United States.

The CHAIRMAN. Yes, sir, or outside the continental limit.

Mr. EAGAN. Well, we get into some variations there because, on some of these clear channel stations, there are full time foreign special assignments made under these two international agreements we have, one with Mexico and one with the other North American countries.

The CHAIRMAN. Yes. There are channels allocated to that. I think there are 14, which you mentioned.

Mr. EAGAN. Yes, sir, but I was trying to point out that on some of these U.S. class I–A frequencies there are some instances where foreign stations are authorized to operate nighttime on the U.S. I–A clear channels in addition to the fact that the foreign countries have some 14 stations on which they have clear channel stations.

The CHAIRMAN. Take as an example WLW, a Crosley station in Cincinnati. They are on 700 kilocycles.

Are there other stations assigned to 700 kilocycles during the day?

Mr. EAGAN. During the day?

The CHAIRMAN. Yes. WSM is on 650 kilocycles. Are there other stations on that channel during the daytime?

Mr. EAGAN. Yes, sir. There is one station in Texas in the daytime.

The CHAIRMAN. What station is that?

Mr. EAGAN. I cannot recall the call letters. It is, I believe, Baytown, Tex. I believe it once had the name of Goose Creek. It is a suburb of Houston, Tex., and the community has changed its name once or twice, but there is one station that operates daytime on WSM's frequency.

The CHAIRMAN. Where there is just one other station like that operating on the channel during the twilight would there be severe interference?

Mr. EAGAN. Yes, sir, there would.

The CHAIRMAN. You mean even during the twilight hours and where there is just one station in the country?

Mr. EAGAN. Yes, sir. I can give you the statistics here.

The name of the town in Texas that I could not recall where this daytime station operates is now called Pasadena, Tex. I believe that is a suburb of Houston, Tex., and the station involved is KRCT.

The CHAIRMAN. What is the power of KRCT?

Mr. EAGAN. I believe it is 1 kilowatt. I can check that, sir, and if that is wrong I shall notify you.

The CHAIRMAN. In other words, 1 kilowatt of power on a station operating in Pasadena, Tex., and the only one on frequency 650 in the whole country would seriously interfere with WSM at the twilight hour?

Mr. EAGAN. Yes, sir. By "twilight" you mean if they were permitted to operate during the hours of 6 to 6 throughout the year.

The CHAIRMAN. And your contention is that that would be severe?

Mr. EAGAN. Yes, sir. I have the statistics here before me in summary form. If we took the month of December and at 6 o'clock local time of this Texas station, the conditions that would result would be there would be a gain in area served of 72 square miles. The area loss in terms of square miles would be 376,202 square miles.

The CHAIRMAN. The area loss where?

Mr. EAGAN. It would be lost from WSM skywave service and from WSM's groundwave service.

The CHAIRMAN. It would be how much?

Mr. EAGAN. It would be 376,202 square miles. In terms of population 56,210 people would receive service from the Texas station.

The CHAIRMAN. Are you talking about the maximum effect that you could have?

I am talking about that twilight area during the time of just before sunup and just after sundown.

Are you talking about the maximum effect it would have, say, at 9 or 10 o'clock at night?

Mr. EAGAN. No, sir; I am talking about 6 o'clock local time for the Texas station in December, which would be the worst conditions under this proposal, but it would be the conditions at 6 p.m., local time in Texas in the month of December.

The CHAIRMAN. What would it be at 9 o'clock? Do you have that statistic?

Mr. EAGAN. No, sir, but I believe I can assure you without doubt it would be more severe. The gain would be less and the loss would be more.

The CHAIRMAN. All I can say is it is very interesting to me why it is that the FCC and you people representing these clear channel stations with a very important facility, a natural resource that belongs to the public, are willing in the morning to let people come on any time they want to from 4 o'clock on without any objection whatsoever, but you extend that privilege only to those who operate on regional channels during the day.

I would like somebody to explain to me that kind of a situation.

Mr. EAGAN. I would like to attempt to, sir.

In the case of this specific situation that you are referring to, under that rule that has been referred to, this Texas station did commence operating before local sunrise in Texas and this, sir, resulted in interference to WSM listeners and, because of that, WSM advised the Commission of these facts with the result that under the provisions of the rule the station was ordered not to commence operation until local sunrise.

The CHAIRMAN. That is no satisfactory answer to me. If the Commission itself had not had some justification for it they would have never issued a rule.

It just seems to me that it is sort of playing footsie with a valuable resource here for certain people to use it as they see fit, and I am going to ask the Commission about the matter when we get an opportunity.

Mr. EAGAN. Yes, sir.

I would just like to add, sir, that we are utterly sincere in the fact that we believe very strongly that the best interests of the people in his country require——

The CHAIRMAN. I understand. You have been emphasizing that all morning. I know that, but I know also that a few people have a valuable piece of natural resource that you simply do not want any one to trespass on, and it seems to me that here there is only a slight concession that is being requested, and over the years there must be something to it in the way of local service and information, which is the basic, fundamental policy behind the Communications Act, service to the people, to the community. We are not living in the 1920's any more. This is 1960 we are living in.

It would seem to me that, after all the years, there could be some way to approach this matter that would be at least partially satisfactory, but I suppose it cannot be done. Anyway, we are consuming entirely too much time with you because we have three other witnesses.

Thank you very much for your testimony.

Mr. EAGAN. Thank you very much.

The CHAIRMAN. Mr. Andrew G. Haley.

STATEMENT OF ANDREW G. HALEY, COUNSEL FOR MEREDITH BROADCASTING CO.

Mr. HALEY. Mr. Chairman and gentlemen of the subcommittee, my name is Andrew G. Haley. I am counsel for Meredith Broadcasting Co. and its broadcasting stations which include WOW, Omaha, Nebr. (590 kilocycles, 5 kilowatts, unlimited hours), WHEN, Syracuse, N.Y. (620 kilocycles, 5 kilowatts, days, 1 kilowatt, night, unlimited hours), KRMG, Tulsa, Okla. (740 kilocycles, 50 kilowatts, day, 25 kilowatts, night, unlimited hours), KCMO, Kansas City, Mo. (810 kilocycles, 50 kilowatts, day, 10 kilowatts, night, unlimited hours), and KPHO, Phoenix, Ariz. (910 kilocycles, 5 kilowatts, unlimited hours).

I want to point out, Mr. Chairman, that WOW, WHEN, and KPHO, are regional stations, and that KRMG and KCMO are class II stations.

I am not representing any clear stations here today.

Meredith Broadcasting Co. is opposed to the adoption of legislation to permit daytime only standard broadcast stations in the United States to operate between 6 a.m. and 6 p.m. the year around. Meredith urges the subcommittee to report unfavorably the pending bills (H.R. 6676, 6868, 8286, 9672, and 10275) for reasons which I will now discuss.

There has been some talk during the course of these hearings of conducting an "experiment" with respect to the operation of the daytime stations from 6 a.m. to 6 p.m. to ascertain whether interference would actually result.

I might say, parenthetically, off my prepared statement, that I think this idea stems from a sense of high integrity and a very reasonable attitude on the part of the proponents because, naturally, if there is what they consider a conflict of facts, the facts should be established by an experiment, so I have no criticism actually of anybody who is making this suggestion, but I think it stems in all good faith from the very fine Congressmen who have thought about this matter.

I would like to point out that the public of this country suffered wantonly from just such an "experiment" during the first decade of the age of radio—from 1920 until the expert body set up by Congress finally achieved order out of the chaos which had existed part of that time. And when I refer to the public, I especially refer to that portion of the public most seriously injured; namely, the rural American family who needs radio most of all. I have very vivid memories of the problems of those days. I am a native of the State of Washington and our junior Senator at the time was my old friend, Senator C. C. Dill. I was a young man working my way through law school and Senator Dill was kind enough from time to time to give me research assignments and small patronage jobs to help me defray my expenses. Senator Dill had me do considerable research work preparatory to the legislative consideration and final enactment of the Radio Act of 1927. I later on was privileged to help out in connection with the drafting of the Communications Act of 1934.

From the outset of its consideration of the original regulatory code, Congress was convinced that the problem of bringing order out of the broadcasting transmission and reception chaos was one which had to be entrusted to a body of experts. Congress decided at that time and, without exception, Congress has continued to follow the policy of delegating to one of its arms; namely, in the first place the Federal Radio Commission, and now the Federal Communications Commission, the task and duty of regulating transmission of broadcasting service in a manner which will be most conducive to the elimination of interference and which will provide optimum service to all segments of the population of the United States. In hundreds of declarations, Representatives and Senators have stated that the urban dweller should receive no special preference over the rural dweller. If any of the bills being considered at this session were enacted, two lamentable results would follow; namely, the orderly pattern of expert regulation by the duly constituted agency of Congress would be seriously impaired and for the first time Congress would be preferring the urban dweller over the rural dweller.

Meredith supports the decisions of the FCC, reached after two exhaustive factfinding proceedings and based on many years of expert study and experience. For, as the records of the FCC proceedings show, the extension of hours of daytime-only radio stations would have grave adverse effects on the radio service available to the public, including:

(*a*) The loss of service to a far greater population than that which would gain service from the extended operations of daytime stations.

(*b*) The extension of service of daytime stations to only a small fraction of their daytime audiences.

(*c*) Interference from daytime-only stations to present full-time stations to such an extent that many of the latter would not even serve their principal cities.

(*d*) Destruction of practically all secondary service, and the loss of the only radio service to more than 25 million people.

(*e*) Impairment of U.S. obligations—and rights—under the present treaties with other North American nations.

I would like to elaborate on these matters.

LOSSES OF SERVICE VERSUS EXTENT OF NEW SERVICE

No party other than the DBA has seriously challenged the FCC's expert data as to the enormous losses of existing radio coverage which would result from the proposed 6-to-6 operation of daytime radio stations. And the minor gains of service by the daytime stations involved do not begin to compensate for such losses. As the FCC concluded in its most recent report on the subject, 25,631,000 persons would lose skywave service—their only radio service—and only 1,761,622 persons would gain groundwave service if the 6-to-6 proposal were adopted.

The serious adverse effects on the services rendered by the Meredith stations are evident from the following tabulation extracted from the FCC's September 19, 1958, report on "Extended Hours for Day-

time Broadcast Stations" (report and order, docket No. 12729, Sept. 19, 1958, 25 FCC 1135):

Station and present nighttime service			Loss to be suffered			
Location	Population	Area	Population	Percent	Area	Percent
WOW, Omaha, Nebr	1,608,078	44,378	1,160,559	72	40,655	92
KRMG, Tulsa, Okla	309,131	2,167	92,448	30	1,373	63
KPHO, Phoenix, Ariz	283,120	3,500	31,160	11	2,170	62

NOTE.—Figures not available as to KCMO, Kansas City, Mo., and WHEN, Syracuse, N.Y.

These figures are illustrative of the gross losses of service which would be experienced by existing stations if the daytime stations on the same or adjacent channels were to operate as requested by the Daytime Broadcasters Association.

ADVERSE EFFECTS ON FOREIGN RELATIONS

The United States has obligations under treaties with the other North American nations to prevent the occurrence of objectionable interference to the standard broadcast stations of such nations. This country depends on the same treaties for protection of the service areas of its own stations. In the North American Regional Broadcasting Agreement, protection against the type of extended hours operation sought by the daytime interests is provided. A daytime only operation is defined in the agreement as:

> * * * operation between the times of local sunrise and local sunset at the transmitter location of the station; however, in particular cases other hours for daytime operation may be established, either in the present agreement or in bilateral agreements, between the respective contracting governments taking into account the location of the station it is intended to protect.

The NARBA was negotiated by this Nation's representatives on the basis of domestic rules and regulations prohibiting operation by daytime stations, except during the stated hours of local sunrise to local sunset, plus (in certain cases) operation between 4 a.m. and local sunrise. Had we intended to permit operation at other times, it is doubtful whether an agreement could have been reached without concomitant provisions for the operation of foreign daytime only stations during such extended hours.

In the United States-Mexican agreement the hours of operation of daytime-only stations are stated as sunrise to sunset. In this regard it is significant to note that the position of the Daytime Broadcasters Association was explored at great length by the Senate Committee on Foreign Relations in connection with the ratification of the United States-Mexican agreement. As that committee stated:

> The committee desires to stress that it has delayed action on these treaties for 3 years in order to give the daytime operators the fullest opportunity to develop their case before the Federal Communications Commission and the Committee on Foreign Relations. On the basis of the record, however, it is now the committee's belief that the national interest will be injured by any further delay on the treaties.

NATIONWIDE SUPPORT FOR MAINTAINING PRESENT HOURS OF DAYTIME-ONLY STATIONS

The FCC's reports denying proposals for extended hours for daytime stations have been supported by a most decisive majority of the broadcasting stations in the Nation, and other very significant segments of the public of the United States favor the FCC's approach. The National Grange, for example, has expressed its opposition to the pending legislation and to the position of the Daytime Broadcasters Association. The Grange stated in a letter dated June 6, 1960, to the chairman of this committee:

> Because of the limited coverage of the daytime stations, radio service cannot possibly be provided to roughly one-half of the geographic area of the United States except by signals offered by regional and clear channel broadcasting stations during the hours after sundown and before sunup.

The conclusion is inescapable that a vast majority of the public, the broadcasting industry, representatives of the rural audiences and the FCC itself oppose the adoption of legislation permitting extended hours for daytime broadcast stations.

I would like to point out also that there is no unanimity among the operators of daytime broadcast stations as to their needs or desires for this type of extended hours operation. When the Daytime Broadcasters Association polled 225 daytime only stations seeking support of its position against ratification of NARBA and the United States-Mexican agreement, 99 favored and 21 opposed the Daytime Broadcasters position. And year after year there have been so many requests by daytime stations to cease operation before local sunset that it has been necessary for the FCC to initiate a rulemaking proceeding to determine whether there should be a blanket rule authorizing daytime stations to cease operation prior to local sunset during the summer months. For every year, several score daytime stations have requested the FCC to give them authority to sign off early, citing lack of audience in the early evening hours and lack of revenues during the same period.

CONCLUSION

The technical records developed by the FCC in several years of study and experimentation indicate strong reasons for maintaining the present rules prohibiting operation of daytime stations except during the hours from sunrise to sunset. The best interests of the people will be served by preserving the existing radio services available to them from full-time stations. For the reasons stated above Meredith Broadcasting Co. strongly urges this subcommittee to report unfavorably the proposed legislation.

The CHAIRMAN. Mr. Younger, any questions?

Mr. YOUNGER. Yes, Mr. Chairman.

The calculations you make about the loss of area and loss of population is a mathematical calculation on the part of the engineers, is it not?

Mr. HALEY. I want to reply to your question directly, Mr. Younger, because I listened to your questions with great interest during the course of this proceeding and with great sympathy, and I know that your heart is fully devoted to this task of solving this problem.

I would like to point out, yes, this is an empirical determination based upon Commission studies and embodied in the Commission report and order, which is already part of the record here.

I would like to also tell you, Congressman Younger, that since 1920 we have gone through four, what you might call, sunspot cycles, and I should say in the United States and other countries throughout the world there have undoubtedly been hundreds of millions of transmissions recorded, and classified, and documented, the data reduced, and so on, so that we have arrived at a family of curves with respect to the problems of all hours of the day and all circumstances, latitude, geography, and so on, so this experiment has been going on since 1920, really, and I do not see how an incidental new experiment, the parameters of which have not been defined, could help us at all.

Mr. YOUNGER. Mr. Haley, I do not want to get into any long discussion about this, but it is a very peculiar thing to me that you and the rest of the witnesses are telling about all these people that would be injured. We have not heard from anybody that would be injured. I can tell you as a fact the only letters that I have received are from people who say that they want their daytime station extended to 6 o'clock.

There is a mystery about this.

You are all talking about how you are going to protect the people. We have not heard from anybody representing those people.

You are all represenitng institutions. You have special interests. I do not blame you for representing your interests at all. I think it is a fine American principle.

However, you are talking about some people losing their radio signal and they are not here and you say the farmers in the rural areas are being hurt.

We have not heard from any farmers that are asking for one or the other of these ideas, and I would like to have one of these tests made and find out whether we will get a lot of complaints. I do not place much credence to somebody coming in representing a large sector of our population when the people themselves are not making any protests, and I have been here long enough to know that when they are injured you hear from them.

That is all, Mr. Chairman.

Mr. HALEY. My only comment on that statement, Congressman Younger, is that you will hear about it if you pass this legislation. You have not heard about it now because there has been no occasion for it. We do not represent monopolistic viewpoints whatsoever. We are a farm organization. We are for the farmers. They mean more to us than any other segment of the nation probably, but the point is that we have these immutable laws of nature which we cannot change by legislatoin, and I have great, deep sympathy with the Daytime Broadcasters Association and their objectives, but they are just doing the wrong thing here. They are calling for a horizontal solution to their problem when they have other solutions, very good solutions.

If I were you, Congressman, I would tell the Commission to go to work and decide the clear channel case like Chairman Harris has indicated. If they decide the clear channel case on the basis of making the compensations for all these factors you are talking about, then we will come to a real good solution.

I am not in favor at all of the positon taken by my predecessor on the stand here that the I–A should be continued in their sacrosanct status. I think it is completely bad regulation to have an I–A station in this country.

Now that we have the NARBA treaty ratified and we are secure as far as our national existence is concerned, I see no reason why we should not duplicate in certain regions and in certain areas the I–A stations. There is absolutely no reason why we should not do that in certain areas.

Mr. YOUNGER. I can well understand that you are perfectly sincere in your position and that your positions differ.

All of the witnesses are perfectly sincere. They all differ.

Where are we going to be left? We want to know how the people are going to be served. We do not care about your station or the daytime station. We are interested in what is going to be for the best interests of those that receive the signal, and nobody yet has given us facts, in my opinion, to determine this.

That is all, Mr. Chairman.

Mr. HALEY. There is one more thing. The whole point I have made in my statement is that this should be left to the body of experts, and you should not have just this single bit of horizontal legislation. Advise the Commission that, in your opinion, the Commission should decide the clear channel case on the merits and take care of all these problems, and then I think that your problem will be answered, too, in that process.

Mr. YOUNGER. Thank you, Mr. Chairman. That is all.

The CHAIRMAN. Mr. Haley, your solicitude for the rural people is very encouraging to me. I am glad that we have had some reason to bring out such solicitude for the farmers.

It is interesting also that your stations are in large metropolitan areas such as Omaha, Kansas City, Tulsa, Phoenix, and so forth.

I do not see any of them out in the rural areas anywhere. I am sure there is obvious reason for that.

Mr. HALEY. Mr. Chairman, they could not be in more rural areas. If you can tell me any place in the United States where they could be more rural than Omaha, and Kansas City, and Tulsa, I would like to know it.

Maybe Minneapolis. We would like to have a station there. We do not have one there.

The CHAIRMAN. Minneapolis is not exactly lacking in population.

Mr. HALEY. No. On the other hand, Omaha is in the center of the breadbasket of America and so is Kansas City, and we serve rural populations. The great mass of our service is to rural populations.

The CHAIRMAN. I suppose you have national advertising, do you not?

Mr. HALEY. I should trust so; yes, sir.

The CHAIRMAN. Take away the population of Omaha, Tulsa, and the urban places that you serve. How much national advertising do you think you would get?

Mr. HALEY. This is a question of economics. I could not very well answer. I think the farmer is not much different from the city dweller as far as his desire for national advertising is concerned. He is also a good customer.

The CHAIRMAN. Yes, that is true, but unfortunately there are less and less of them all the time.

Mr. HALEY. Mr. Chairman, on the other hand, take a small city in this area with a daytime station. He is only covering his city or very small contiguous areas next to his city and with WOW in Omaha, Nebr., we cover 44,000 square miles of area, and practically all of that, 95 percent of it, is rural territory.

The CHAIRMAN. But the unfortunate thing about it, Mr. Haley, is you do not advise the people in that rural community way out there what time their schools are going to open, or if they are going to open that day, or what is happening in that community, the local service which they can provide during those hours of the day. You are not going to give them information from Tulsa or Kansas City.

Mr. HALEY. We do a very good job of doing that very thing, sir.

The CHAIRMAN. You do it in Kansas City?

Mr. HALEY. We cannot reach the public otherwise.

The CHAIRMAN. Of course.

Mr. HALEY. This is the only way it can get to the public. The little station in Phillipsburg with a radius of 12 miles still cannot get to the country.

The CHAIRMAN. You do, however, give that local information service to the people in Kansas City, do you not?

Mr. HALEY. We give to our entire area. We have many, many programs that are areawide in interest, including the very things you are talking about.

The CHAIRMAN. You do not answer my question.

You do give that kind of service to the local community where your station is located, do you not?

Mr. HALEY. Yes, sir, also——

The CHAIRMAN. Of course, you do.

Mr. HALEY. But also——

The CHAIRMAN. However, you do not give it out yonder 100 miles to that community that you say you reach.

Mr. HALEY. Yes, sir.

The CHAIRMAN. You do?

Mr. HALEY. Yes, sir. We have many programs which are distinctly aimed at the small city 100 miles away.

The CHAIRMAN. Of course, you pick out a city once in a while and naturally you mention it, but I am talking about the daily information about the community which the people in that community are interested in, and there is no need to tell me that you do provide it because I know you cannot. You do not have that much time on your station.

Mr. HALEY. On the other hand, we will take Jonesville. The little island of Jonesville cannot serve the vast rural area around Jonesville. We serve that rural area. There is an island there and that is all it is, just an island, served by the station in Jonesville. That is performing good service, but the thousands and thousands of farmers and people outside that island must be served by us.

The CHAIRMAN. Thank you very much for your testimony here.

Mr. HALEY. Thank you.

The CHAIRMAN. Mr. Ben Strouse, president of WWDC.

STATEMENT OF BEN STROUSE, PRESIDENT AND STOCKHOLDER, WWDC, INC., AND WMBR, INC.

Mr. STROUSE. Mr. Chairman, I think I ought to say at the beginning I am a city fellow.

Mr. YOUNGER. My territory is that kind, too.

The CHAIRMAN. You may proceed.

Mr. STROUSE. My name is Ben Strouse. I am president and a stockholder of WWDC, Inc., operating radio station WWDC in Washington, D.C., and of WMBR, Inc., operating radio station WMBR in Jacksonville, Fla. Both of these stations are fulltime, regional, 5 kilowatt, radio broadcasting stations.

I appear in opposition to the proposed amendment to the Communications Act which will enable so-called daytime radio stations to operate from 6 a.m. to 6 p.m.

I do not blame daytime stations for wishing to stabilize their hours of operation. I, personally, am a stockholder in two such daytime stations, WEBB in Baltimore, Md., and WEZL in Richmond, Va., and I know full well how many problems would be solved in those two stations if we were able to operate until 6 p.m. all year round instead of signing off at local sunset, and how much more business we could do. If such regular hours of operation were possible without somebody being hurt, I, for one, would be all for it.

But, unfortunately, a tremendous segment of the public will be hurt by being deprived of listenable radio signals and the existing fulltime stations will be hurt by being deprived of audiences.

At the time this same matter was before the Federal Communications Commission, WWDC and WMBR employed the recognized engineering consulting firm of L. H. Carr & Associates to make a study of the actual effect of extended daytime hours on the listening areas of our stations. I would like to quote from their statement filed in docket No. 12729 on April 6, 1959.

In this statement, the engineers set up several hypothetical situations. They found (1) that if unlimited time stations continue under present regulations, but daytime stations are permitted to extend hours of operation to 6 p.m., WWDC would be limited to its 17 MV/m, groundwave contour prior to 6 p.m. and, prior to 7 p.m., our time here in Washington, would still have a limitation of 6 to 8 Mv/m. from interference caused by central time zone daytime stations.

Further, assuming that existing full-time stations were permitted, in fairness, to operate with their daytime facilities until 6 p.m., WWDC would be limited to its 27 Mv/m. groundwave contour prior to 6 p.m. and to 10 to 14 Mv/m. between 6 p.m. and 7 p.m. eastern time. Now, if this sounds like gobbledygook to you, I must admit it does to me, too. I have a completely nontechnical mind and these figures have little meaning to me. But the engineers went on to translate them for minds like mine, and this is an exact quotation:

> As a matter of fact, just prior to 6 p.m. e.s.t. operation of daytime and unlimited time stations under the extended-hours concept would result in objectionable interference to 2,370 square miles within the WWDC normally protected 0.5 Mv/m. daytime groundwave contour; this represents a loss of 98 percent of the area within this contour. It likewise represents a loss of service to 1,244,000 persons or 85 percent of those normally served within this 0.5 Mv/m. daytime groundwave contour.

I would like to interpolate here that according to their maps we would have a signal that would be very hard to listen to south of Union Station in the District of Columbia in addition to losing virtually all of our Arlington, Fairfax, Montgomery, and Prince Georges coverage where 60 percent of the total market population now resides.

Since these population figures were based on the 1950 census, they would be considerably higher today. In other words, say our engineers, almost 9 out of every 10 people now able to listen to WWDC would be unable to do so if this amendment were passed. In conclusion, the engineers said, in part:

> Since WWDC may be considered a more or less typical unlimited time regional station, it may be assumed that the postulated extended hour operation will result in degradation of service of many other stations, including WMBR. The extent of the interference to such other stations may vary, but there is nothing to indicate that WWDC is an extreme example in any respect.
>
> Inasmuch as international boundaries are no barrier to radio signals, it may be expected that the effect on stations in other North American countries would be similar to that on WWDC.
>
> Daytime stations themselves would be expected to suffer abnormally high limitations under extended hours of operation. Since their separations are based on groundwave interference regulations, they may be expected to suffer serious limitation from each other as skywave propagation improves with the approach of sunset. In addition, the daytime stations do not normally benefit from the protection offered by the usual directional operation of unlimited time stations. This factor further increases the potential limitation to these daytime stations.

I have here one copy, sir, of the complete engineering statement filed with the Commission that I would like to leave with the committee if they would like to have it. It is the only spare copy we have.

The CHAIRMAN. Very well.

Mr. STROUSE. Such engineering testimony as this makes it very obvious why the Federal Communcations Commission has, on two occasions, unanimously turned down the requests of daytime stations for extended hours.

These stations knew when they obtained their licenses that their hours of operation were limited for technical reasons. What they cannot justify technically, what they could not prove when appearing before the Commission, they are now trying to force into law through the Congress of the United States. We are sure that this committee will give prior consideration to the public needs and benefits.

Thank you.

The CHAIRMAN. Mr. Younger, any questions?

Mr. YOUNGER. Yes. What are the frequencies of your station in Baltimore?

Mr. STROUSE. 1260 for WWDC and 1460 for WMBR.

Mr. YOUNGER. 1460?

Mr. STROUSE. And 1260 here, WWDC.

Mr. YOUNGER. And what about this daytime station WEBB in Baltimore?

Mr. STROUSE. That is 1360 and the one in Richmond, WEZL, is 1590.

Mr. YOUNGER. Is there a daytime station in Washington?

Mr. STROUSE. There are either 17 or 18 stations serving the Washington metropolitan area, some of these licensed to Silver Spring, or Arlington, and so forth, and about more than half of them are daytime.

Mr. YOUNGER. That is all, Mr. Chairman.

The CHAIRMAN. Mr. Strouse, thank you very much.

I frequently get your WWDC station here, in particular when the baseball games are being broadcast.

Mr. STROUSE. Thank you.

The CHAIRMAN. Mr. Hollis Seavey.

Mr. Seavey, will you identify yourself for the record?

STATEMENT OF HOLLIS M. SEAVEY, DIRECTOR, REGIONAL BROADCASTERS, WASHINGTON, D.C.

Mr. SEAVEY. My name is Hollis M. Seavey. I appear here in my capacity as director of Regional Broadcasters with offices at 1735 De Sales Street, Washington, D.C. I would like to add that Regional Broadcasters has received financial support from some 85 radio stations in some 30 States. Many additional stations have cooperated with us to the extent of making their views known to the Congress.

Regional Broadcasters is opposed to the bills being considered at this hearing. It believes that, if the Communications Act were amended in the manner contemplated by the language of these bills, irreparable damage would be caused to the coverage areas of most radio stations during several months of the year and a substantial net loss of radio service would thereby result.

In view of the extensive comments which have been made on this subject, both at the FCC and before congressional committees, I shall confine my testimony to a few brief points.

As early as 1927 the U.S. Congress, realizing the seriousness of the problems in the field of communications, enacted into law a bill creating the Federal Radio Commission. In 1934 to meet the needs of a rapidly burgeoning and increasingly complex industry the Congress passed the Communications Act and the Federal Communications Commission then came into being. I firmly believe that the Congress showed wisdom and foresight in setting up this regulatory body. In a field replete with intricate problems this independent agency has assembled competent technicians to enable it to regulate the industry in such a way as to best promote the public interest, convenience, and necessity. From time to time it is, of course, necessary and proper for this agency to report to the Congress. Also this committee and its counterpart in the Senate must undertake broad inquiries into fundamental questions in which the Commission requires policy direction. In this case, however, I respectfully submit the matter is one which because of its narrowness and complexity rightfully belongs under the jurisdiction of the FCC.

In this connection, as you know, the Commission has twice considered petitions filed by the Daytime Broadcasters Association (DBA) which sought authorization in one instance from 5 a.m. to 7 p.m. and, in the other instance, operation from 6 a.m. to 6 p.m. After weighing voluminous evidence presented by all interested parties in both proceedings, the Commission by unanimous votes denied the petitions. We believe that the Commission acted wisely and prevented a further loss of radio service to listeners throughout the country.

It is essential to realize that parties who have applied to the Federal Communications Commission for daytime radio facilities have

been fully aware that licenses for such facilities restricted operations to the period from local sunrise to local sunset. Last January, Mr. Ray Livesay, chairman of the board of directors of DBA sent a letter to Senator Wayne Morse, chairman of a Senate foreign relations subcommittee, which held hearings last January on the ratification of two international broadcasting agreements. In it he described the plight of the daytime broadcasters as follows:

> Our situation is perhaps similar to the man who sits down in a card game where the deck was "stacked" before he came in—he can't win.

This allegation simply does not correspond with the facts. There is no concealment, no subterfuge in the Commission's licensing policies. If an applicant thought the deck was "stacked," he didn't have to get into the game. Some 1,600 daytime broadcasters have sat at the table, however, and almost all of them have apparently found it sufficiently profitable. A very negligible amount of licenses has been turned back to the FCC by people who "can't win."

Previous witnesses have amply testified why the proposal is unsound. I think if one were to reduce the problem to a single sentence—and I believe this can be done—it would read as follows: It is impossible to repeal the laws of nature.

Transmission conditions in the standard broadcast band vary throughout the day. These variations are such that from sunset until after sunrise the interference capability of radio signals is substantially greater than during daylight hours. Until such time as these natural laws can be changed by legislation, by FCC action or by advances in the technical art, we must abide by them.

During the hearings which were held before a Senate Small Business Committee in April of 1957, Mr. Livesay testified as follows:

> You are going to be told, I am sure, that this is strictly an engineering problem. Well, it goes deeper than that. Right alongside of the engineering slide rule you have got to apply the desires and needs of people, we think. You can't just weigh it on engineering alone.

What Mr. Livesay conveniently overlooks are the limitations which the inflexible laws of nature impose on the proposal. The scarcity of spectrum space and the peculiar nature of radio waves make it necessary for the FCC to pursue its allocations functions in a manner which will best serve the "desires and needs of people." We believe it did so in denying the two petitions.

Notwithstanding what may be said to the contrary, this problem is fundamentally an engineering one. Should this additional operation be authorized would it result in a net loss of radio service throughout the United States? The DBA attacks the criteria which the Commission has used in turning down its proposal. In fact, the counsel for DBA at the Senate Foreign Relations Committee hearing in January stated:

> Mr. Barr (Assistant Chief of the Broadcast Bureau) has computed those (interference conditions) on the basis of engineering standards that the Commission constructed years ago, based upon a series of statistical averages, and this is one of the things that has been in question.

Subsequently, at this same hearing Howard Hayes, vice president and general manager of Potomac Broadcasting Corp., made these comments:

> Now, we are talking here about the laws of physics. This has been mentioned a number of times, and it is true that the engineering standards of alloca-

tion which the Commission and its predecessors, the Federal Radio Commission, promulgated many years ago were based upon laws of physics just as fundamental as the laws of hydraulics or the laws of atomic energy are today. Today they are all physical laws, and they are not readily contravened by legislation.

It seems absolutely impossible to me that we can in any way legislate against the natural laws of physics.

The sun rises today and sets today at the same time that it rose and set on the same date at the time the rules governing allocations were promulgated originally.

The effects of sunrise and sunset are just as pronounced today as they were then. There has been no change.

The rules, as have been stated, in my opinion as an engineer, are actually not overly conservative, as has been pointed out.

This point of view of Mr. Hayes is shared by the vast majority of objective, qualified communications engineers.

Statements have been made to the effect that "My station has been on the air after sunset and there were no problems." This may have been true in isolated instances when only one daytime station on a frequency operated beyond sunset. If all daytime stations on most regional frequencies were operating beyond sunset the results would be chaotic. It is like putting a drop of chocolate sirup in a full glass of milk. The white color in unchanged. However, if 50 drops are deposited in the glass the color will change distinctly. The cumulative effect of the interference is what makes the proposal so distinctly contrary to the public interest. And no class of stations is more affected in this respect than regional stations. On more than two-thirds of all regional channels—28 out of 41—daytime stations outnumber the regional stations and in many cases by more than 2 to 1. For example, to the frequency of 1590 kilocycles are assigned 14 full-time stations and 47 daytime stations. To the frequency of 1260 kilocycles are assigned 20 full-time stations and 41 daytime stations. The totally destructive interference which would result from operation of daytime stations under nighttime conditions has been graphically portrayed in countless presentations which have been filed with the FCC.

One fact that should be stressed in this connection is the method of operation of most regional stations. The vast majority of them—69 percent—must either reduce power and/or directionalize in a manner which results in less coverage during the period from sunset to sunrise than what they enjoy during daytime hours. To superimpose on this already serious limitation the interfering signals of daytime radio stations would severely cripple regional stations' ability to serve their audiences.

Running through the arguments of the DBA in testimony before congressional committees and in pleadings filed with the FCC is the contention that this problem pits the daytime broadcaster against the clear channel broadcaster—the little against the big—the small businessman against the wealthy, powerful tycoon. The implication that the clear channel stations are the only ones opposed to this proposal is not true. Less than 3 percent of the daytime stations are assigned to U.S. class I–A frequencies, whereas almost 64 percent are assigned to class III (regional) frequencies. It is the class of station on whose behalf I am testifying which would be most in jeopardy if the proposal were implemented. Testimony from regional operators at this hearing and the many communications from those unable to come to Washington indicate the deep concern of regional stations about this problem.

It is the firm conviction of Regional Broadcasters that the Federal Communications Commission has served to expand radio service throughout the United States by licensing daytime radio facilities. Regional Broadcasters shares the views of informed unbiased engineers that the Commission standards which have been used to allocate broadcast facilities are sound and conservative. It believes that DBA has been given every opportunity to present its case before the FCC. In view of the overwhelming sentiment that the proposal embodied in these bills in unworkable, I respectfully request that this committee take no action on the bills, and reaffirm the considered judgment of the FCC that any extension of the operating hours of daytime radio stations does not meet the test of public interest and would result in a serious loss of radio service to millions of citizens during several months of the year.

The CHAIRMAN. Mr. Younger, any questions?

Mr. YOUNGER. No, Mr. Chairman.

The CHAIRMAN. Mr. Seavey, why is it that your organization permits the rule of the Federal Communications Commission for daytime stations to come on in the morning from 4 o'clock on?

Mr. SEAVEY. I think, Mr. Chairman, some observations are due in this area.

I know this has been mentioned on frequent occasions during the course of these hearings. I think, in the first place, as has been mentioned earlier, there are no reliable statistics as to the number of stations that are going on prior to sunrise on the regional frequencies. Whether it is the vast majority of them or whether it is relatively few, I cannot state, and I do not think anyone can with any positiveness.

I think another factor that must be taken into account is the question of time differences throughout the United States. For example, on the frequency of 560 kilocycles there are two full-time stations on the west coast. One of them is in San Francisco and the other is in Wenatchee, Wash. If a daytime station on that frequency should go on the air at 4 a.m. in the East or Midwest time zone, it would be of no particular consequence to these two stations because this is substantially earlier than the time they go on the air, whereas at the other end of the day, when we are talking about the period around sunset, every radio station in the United States is operating and many more stations are affected.

The CHAIRMAN. Of course, you are going west. Just take the other end of it. Let us go east.

Mr. SEAVEY. That is right. It does work the other way with some of the stations, but, as I point out, in the early morning hours there is the fact that stations as you go west are not on the air and those stations in the eastern time zone would not affect the operation of the western stations, whereas during the afternoon periods all radio stations are on the air.

The CHAIRMAN. I still do not consider that a satisfactory answer to my question. Maybe you do not have it; I do not know. It is rather interesting to me that that rule applies only to the daytime stations that operate on the regional channels. Why is that?

Mr. SEAVEY. I would not want to pose as an expert in saying why that is. I think the Commission, Mr. Chairman, could most probably give you the answer to it.

The CHAIRMAN. They will have an opportunity.

On the other hand, did the Regional Broadcasters oppose the regulation?

Mr. SEAVEY. That I cannot answer, Mr. Chairman. I am not familiar with the history.

The CHAIRMAN. Has anybody in the industry, clear channel or otherwise, opposed the regulation?

Mr. SEAVEY. I do not know the fact on that, Mr. Chairman.

The CHAIRMAN. Thank you very much for your testimony.

That is the call of the House.

We will have to go. The timing was very good today, I might say, because you are the final witness and you have just completed your testimony.

Thank you very much.

Mr. SEAVEY. Thank you, Mr. Chairman.

The CHAIRMAN. This will conclude the hearings with the exception of the return meeting with the Federal Communications Commission on some of the problems that have been raised.

The record will be held open for 5 days for anyone to file a statement if they so desire.

The committee will adjourn.

(The following material was received for the record:)

STATEMENT IN SUPPORT OF PASSAGE OF H.R. 6676 TO AMEND SECTION 303 OF THE COMMUNICATIONS ACT OF 1934, AS AMENDED

My name is R. M. Saxon, of Little Rock, Ark.; I am president and director of the Southern National Insurance Co. of Little Rock, Ark. I am also president and director of Southwestern Broadcasting Co., licensee of station KVLC, Little Rock, Ark., and I am president and director of Lake Broadcasting Co., licensee of station KIKS, Sulphur, La.

Station KVLC operates on 1050 kilocycles with 1 kilowatt of power, daytime only; station KIKS operates on 1310 kilocycles with 500 watts power, daytime only. Based on the experience of these two stations, we strongly support the efforts to extend the hours of operation of daytime-only stations. There is now pending before this Subcommittee on Communications and Power of the Committee on Interstate and Foreign Commerce in the House of Representatives, five bills, H.R. 6676, H.R. 6868, H.R. 8286, H.R. 9627, and H.R. 10275. All are identical in language and request an amendment to section 303(c) of the Communications Act so as to permit daytime broadcasting stations to operate at least from 6 a.m. to 6 p.m. We strongly urge the adoption of this legislation.

There had been pending for some time various proceedings before the Federal Communications Commission looking toward the relief proposed in these bills. The Commission, however, has seen fit to deny any relief to the daytime broadcast stations despite the clear benefits of extended hours of operation. Daytime stations now are required to sign off at sunset, which in the months of December and January can be as early as 4:30 p.m. From long experience we know that such limited hours seriously impairs our ability to render the sort of local radio service we are uniquely designed to give.

Broadcasting has changed tremendously in the last 20 years. The growth in the number of radio stations—now exceeding 3,000—has been the result of a proven desire and need throughout the country for means of local expression in many hundreds of communities. It is, of course, necessary to accommodate the needs of rural and remote listeners who have no access to radio except for the high-powered clear channel or regional stations; and, in fact, there are 59 full-time class I stations giving service to extended areas of population. There are also about 1,300 daytime-only stations, including over 500 class II stations and nearly 800 class III stations. In addition, there are about 1,800 full-time stations (class II, III, and IV) rendering service to hundreds of other communities. Thus, today radio is essentially a local medium of communication rendering service to local communities and their nearby areas. Many areas and small

communities which formerly could rely only on service from high-powered clear channel stations today have their own local outlet; hence the need for service in those rural areas, so important in the 1920's and 1930's, is not present today.

Much of this local service is provided by daytime-only stations and so the hours of operation are critical. For example, in the case of KIKS at Sulphur, La., the requirement that it go off the air relatively early in the afternoon in the winter results in absolutely no local service to that community because KIKS is the only local station. Thus, thousands of people in this area are deprived of the needed service immediately after sunset. This same situation can be multiplied throughout hundreds of other communities who look to their own local daytime station for community radio service.

Not only has the allocation pattern of radio changed since the original allocation principals were established, but also the nature of radio programing has changed. Radio today relies heavily on recorded music, news, and special events information. The better radio stations aggressively and diligently seek out local matters of interest and concern to the community. These are promoted through extensive news coverage, interviews, forum discussions, and miscellaneous talk programs. By these techniques the stations identify themselves as an integral part of the community. Entertainment program, as such, are left to the province of television.

A very critical aspect, therefore, of radio's service to the public is the service it gives around the sunrise and sunset hours. Studies show that radio has its biggest audience during these hours when people are going to and from work, preparing meals, and relaxing prior to the dinner hour. Yet, because of the allocation rules and technicalities of interference, these are the very hours, which during the winter months, the local daytime stations have to leave the air. For these reasons it is important that service on the daytime stations be permitted from 6 in the morning to 6 at night.

The basic question is whether or not the giving of this needed additional program service will cause, from an engineering point of view, so much loss of service due to interference as to make the extended hours proposal unworkable. It is believed that there will not be the substantial loss of service claimed by the opponents of the proposed rulemaking. At no time would a 6 p.m. signoff involve operation as much as 2 hours after local sunset nor would a 6 a.m. sign-on involve operation as much as 2 hours before sunrise. These 2-hour periods are important because of the peculiarities of nighttime skywave interference. The worst that can happen is that nighttime skywave interference from the daytime station operating beyond sunset and before sunrise will cause interference to existing full-time stations.

The skywave propagation commences building up approximately 2 hours before sunset. That is to say, ionization begins above the atmosphere and radio signals which are "lost" during the day bounce off this ionosphere at night and cause destructive interference to other stations on the same or nearby frequencies. Thus, we have nighttime skywave interference, a phenomenon not present during daytime hours. Nevertheless, the full buildup of the skywave interference does not occur until 2 hours after sunset and it commences to diminish 2 hours before sunrise. Thus, whatever nighttime skywave conditions exist in the middle of the night, the fact of the matter is that less interference conditions exist up to 2 hours after sunset and commencing 2 hours before sunrise. Other interference conditions exist during these critical hours—something less serious than predicted.

Hence, by permitting operating from 6 a.m. to 6 p.m., there will not be the terrible loss of service commonly predicted. There will be some loss of service of course, but since the skywave signal is constantly changing during these transition periods, no specific propagation curve can be applied to determine exact interference conditions. Most of the studies made on these transition periods show that the only significant objectionable interference which would exist occurs normally after 6 p.m. It is sincerely believed, therefore, that there would not be any serious dislocation of service throughout the country if 6 p.m. were agreed upon as the signoff time, and 6 a.m. as the sign-on time.

It is therefore submitted that the Congress should enact one of these bills so as to permit the extended hours of operation to bring additional needed service to thousands of communities in this country.

FURTHER STATEMENT OF J. R. LIVESAY, CHAIRMAN OF THE BOARD OF DIRECTORS OF THE DAYTIME BROADCASTERS ASSOCIATION

This further statement is submitted pursuant to the opportunity afforded by the subcommittee to the participants in the hearing to submit further statements for the record. This statement will be limited to a brief analysis of the evidence in the record with respect to the possible effects of authorizing the operation of daytime-only stations on a nationwide trial basis for a minimum period from 6 a.m. to 6 p.m.

We wish to emphasize, first, the fact that such a trial operation would involve only 4 to 5 months a year and in the case of regional daytime stations, the longest period involved would be an hour and a half in the extreme northern latitudes on the shortest winter days of the year.

As has been stressed in the hearings, the great majority of daytime-only stations presently operate during presunrise hours. As of March 1, 1960, there were 1,016 daytime stations on regional channels, which under the Commission's rules, are permitted to operate with their daytime facilities between the hours of 4 a.m. until local sunrise unless the Commission terminates such presunrise operation. There are only 58 daytime stations on U.S. class I–A clear channels and only 67 daytime stations on U.S. class I–B clear channels. The Commission's rules authorize these stations to operate prior to local sunrise where (1) the class I station is located east of the daytime station in which case operation may begin at local sunrise at the class I station, and (2) where an agreement has been reached with the class I station to begin operation prior to local sunrise.

It is known that a number of the daytime stations on U.S. class I channels have for many years operated presunrise and postsunset by special Commission permission, as in the case of station WOI, Ames, Iowa (presunrise) and station WNYC, New York City (postsunset until 10 p.m.). It is also known that some stations operate presunrise with the permision of the dominant class I station, as in the case of WHCU, Ithaca, N.Y., and possibly several others which may be shown by Commission records. In addition, there are 16 limited time stations which for many years have been authorized to operate after local sunset, and in some instances, this may be as much as 2 or 3 hours after local sunset depending upon the respective time zones in which the daytime and class I stations may be located.

With respect to daytime stations on the foreign clear channels (of which there were approximately 461 as of March 1, 1960) there appears to be no sound reason why an approach should not be made to the foreign countries concerned for their assent to a trial 6 a.m. to 6 p.m. for U.S. daytime stations on such channels. Many of the U.S. daytime stations are located at considerable distances from the foreign clear channel stations. In fact, there are many instances in which there are U.S. daytime stations on a Mexican clear channel, where such daytime stations are located at considerably greater distances from the Mexican clear channel station than Canadian or Cuban stations operating full time on the very same channel. Some of these instances have been described at pages 117 to 119 of the printed record of the hearing before the subcommittee of the Committee on Foreign Relations of the U.S. Senate, 86th Congress, 1st session, with respect to the ratification of the North American Regional Broadcasting Agreement and the Mexican agreement. Although not detailed in those hearings, it will be found that ther are many instances in which U.S. daytime stations operating on Canadian clear channels are located at greater distances from the Canadian clear channel station than Mexican or Cuban stations operating full time on the very same channel.

The Daytime Broadcasting Association has fully set forth, in its comments in the Commission's proceedings in docket No. 12729, the various considerations indicating the advantages, feasibility, and desirability of trial 6 a.m. to 6 p.m. operations, including the statement of its consulting engineer, Everett L. Dillard, with respect to this matter. Therefore, there is attached hereto, for inclusion in the record as part of this further statement, a copy of such comments and engineering statement.

BEFORE THE FEDERAL COMMUNICATIONS COMMISSION,
WASHINGTON, D.C.

DOCKET NO. 12729

IN THE MATTER OF INQUIRY INTO THE ADVISABILITY OF AUTHORIZING STANDARD BROADCAST STATIONS TO OPERATE WITH FACILITIES LICENSED FOR DAYTIME OPERATION FROM 6:00 A.M. OR LOCAL SUNRISE (WHICHEVER IS EARLIER) TO 6:00 P.M. OR LOCAL SUNSET (WHICHEVER IS LATER)

COMMENTS OF THE DAYTIME BROADCASTERS ASSOCIATION

The Daytime Broadcasters Association, Inc. (hereinafter referred to as DBA), submits the following comments in response to the Notice of Inquiry in the above entitled proceeding:

1. The Commission's stated objective in the instant proceeding is to obtain comments, views, and data from interested parties to assist the Commission in arriving at a determination whether to institute rulemaking proceedings looking toward the amendment and revision of its rules governing the allocation of standard broadcast frequencies to authorize the operation of daytime-only stations from 6:00 A.M. or Local Sunrise (whichever is earlier) to 6:30 P.M. or Local Sunset (whichever is later). The Commission stated that in its view it had not been apprised of sufficient and necessary facts upon which it might reasonably predicate a decision with respect to the effect of the proposed changes contemplated in the "6 to 6" operation of standard broadcast stations by daytime-only stations. Accordingly, the Commission concluded that it would be appropriate and useful to afford all interested parties an opportunity to submit data and views on detailed and specific issues with respect to the engineering considerations involved, as well as on other related facets of the problem.

2. It has been, and is DBA's position, that the determination of the question of whether the Commission should authorize extended and uniform hours of operation for daytime stations must depend on realistic factual considerations. DBA believes that it has been demonstrated, in the presentations heretofore made to the Commission, that there is a great public need for extended and uniform hours of service from local daytime stations, and that substantial public interest benefits would result therefrom. At the same time, in order to meet the claims of the opponents of DBA's proposal that grave public detriments would result because of alleged interference, DBA has submitted extensive and detailed comments prepared by its consulting engineer which DBA believes constitutes substantial evidence of the unlikelihood of such claimed public detriments. In the instant proceeding, the Commission has called for even more voluminous "engineering" and other data than it requested in Docket No. 12274. DBA is obviously in no position to furnish such data—not simply because its limited resources do not permit it to do so but because it is literally impossible for any one party or indeed any combinations of the parties, to furnish such data. This is so for the reason that the development of such data requires the application of theoretical concepts to an almost infinite number of complex variables involving more than 3,000 stations in the North American continent, thousands of distances and mutual interference calculations among groups or combinations of stations, all for a number of increments of time, variations in sunrise and sunset for thousands of stations, and thousands of population studies over the United States. And, as DBA previously pointed out, such an "engineering" presentation must necessarily be of doubtful or no value since there are in fact no standards which have been adopted or officially recognized by the Commission which are applicable to the semidarkness or "twilight" conditions during certain months of the year which are involved in the proposal.

3. In the prior proceedings in Docket No. 12274, the Commission denied the proposal for uniform and extended hours for the reason that in the Commission's view, the proposed operation of daytime broadcast stations for such hours would result in a substantial degradation of standard broadcast service; and that weighing in the balance the expected gains of service in terms of areas and population on the one hand, and the expected losses of service on the other hand, the public interest would be adversely affected by the grant of such extended hours. Analysis of the Commission's Report and Order, as well as its later Memorandum Opinion and Order, denying the DBA's Petition for Reconsideration, makes it abundantly clear that the Commission's conclusion was predi-

cated in its entirety upon an implicit premise that the proponents had the burden of proof and had failed to meet that burden since they had not provided enough data to overcome a long standing presumption, based on theoretical engineering concepts, that serious losses of service would result if the *status quo* were to be disturbed. In the instant proceeding, the Commission again seeks to obtain, in order to determine whether *rulemaking proceedings* should be instituted, voluminous data, also of a theoretical nature, with respect to the very same matters involved in the earlier proceeding. DBA believes that even if such data could physically be provided to the Commission, it would be of little or no value in resolving the questions presented for the reason that there are no recognized engineering standards for the development of such data and therefore it would be of doubtful validity as a basis for prediction of probable gains or losses of service.

4. In the light of the foregoing, DBA respectfully submits that the only practicable, feasible and reasonable approach to the problem is to provide for a procedure which will enable the Commission to obtain more reliable and complete information than is now possible. The procedure suggested is that the Commission authorize—on an interim and experimental basis—the operation of daytime-only stations from 6:00 A.M. or local sunrise (whichever is earlier) to 6:00 P.M. or local sunset (whichever is later) for a period of two years. Such operations could be upon such terms and conditions as would assure the development of information concerning gains and losses of service in terms of areas and population during all hours affected by the proposal, other services in the area affected, the relationship of the operation of unlimited-time stations with different daytime and nighttime facilities to the Commission's determination herein, the relative and comparative needs of different communities for extended and uniform hours, the feasibility of operation by daytime stations with reduced power during such extended hours, together with such other data of an engineering and nonengineering nature which may be relevant and material to the Commission's ultimate determination.

5. The basic problem which has concerned the Commission, i.e., possible loss of needed service, may in this manner be resolved not by theoretical data but by the actual results. Thus, it may be determined whether in fact in areas in which it has heretofore been presumed that the public relies on clear-channel service, such service has actually existed, and if it has, whether it will actually be lost through interference; and whether in fact any substantial gains in service from daytime stations will result or whether, as has been claimed upon the basis of theoretical data, only insignificant gains may be expected. Such data may be correlated with actual data as to listeners' preferences based upon audience surveys. For in the final analysis, the question of whether "service" exists or whether "interference" is harmful or objectionable, is meaningful only in terms of what the public actually listens to and wants in the way of program fare. Absence of such data has, in the past, been one of the most serious deficiencies in the Commission's approach to the problem of revised hours of operation for daytime stations, as has been pointed out by the Senate Committee on Small Business. It is respectfully submitted that this factor should no longer be ignored.

6. The proposed test operations, in addition to providing "factual" rather than "theoretical" information, would provide up-to-date information. Up to now, there has been presented to the Commission by the Clear-Channel opponents of the DBA proposal, a mass of hopelessly outdated data. Thus, despite the fact that the greatest population growth in the history of the nation has occurred in the last ten years including shifts in areas of population concentrations, only 1950 Census data has been available and relied upon by the Commission, and indeed it appears that various exhibits submitted in these proceedings by CCBS may have been based upon the earlier 1940 date. The two year test period proposed herein would make it possible for the Commission to base its determination upon more recent census data which would become available during this period.

7. It is recognized that objection will be raised that once such experimental operations have been allowed to commence, it will be difficult or impossible to terminate them at the end of the trial or test period. This would, of course, be true if the public benefits of, and the absence of serious public detriment from, such operations become overwhelmingly apparent. But in this event, there can certainly be no sound objection to continuance of such operations even after the two year experimental period. On the other hand, if public detriment and absence of overriding public benefits should become apparent as

a result of such operation, there could not conceivably be any practical obstacle to the termination thereof at the end of two years. For unlike many experimental or trial operations which the Commission has been willing to authorize in the interests of obtaining reliable data necessary for a final policy determination,[1] the instant proposed trial operations would not involve any expenditures or investments whatever on the part of broadcasters or the public, and therefore there can be no possibility of a claim of financial loss at the time termination becomes necessary. And, the Commission by the imposition of appropriate conditions, may safeguard against the continuance of any operation, even during the two year period, which may be found to be resulting in serious public injury. The situation during this limited two year period would be similar to that which the Commission has for years sanctioned under Section 3.87 of its rules. The only difference would be that, in view of the experimental purposes of the two year trial operation, the Commission should require a concrete showing of substantial public injury without overriding public benefit, as a basis for terminating any operation during the two year period. Otherwise, the whole purpose of the trial could be completely defeated.

8. In the light of the foregoing, it is respectfully urged that the Commission now amend its rules on an interim basis to authorize experimental or trial operation of daytime only standard broadcast stations from 6 A.M. or local sunrise (whichever is earlier) to 6:00 P.M. or local sunset (whichever is later) for a period of two years, subject to conditions which will provide such specific data and information as the Commission may deem necessary to enable it to determine whether its Rules should or should not be amended to provide for regular operation of daytime-only stations from 6:00 A.M. or local sunrise (whichever is earlier) to 6:00 P.M. or local sunset (whichever is later).

Respectfully submitted,

DAYTIME BROADCASTERS ASSOCIATION, INC.,
BENEDICT P. COTTONE,
ARTHUR SCHEINER,
Its Attorneys.

MAY 8, 1959.

BEFORE THE FEDERAL COMMUNICATIONS COMMISSION,
WASHINGTON, D.C.

AN ENGINEERING STATEMENT BY EVERETT L. DILLARD ON BEHALF OF DAYTIME BROADCASTERS ASSOCIATION DIRECTED TO "NOTICE OF INQUIRY" BY THE COMMISSION IN DOCKET 12729

Extensive testimony and evidence has already been filed in Docket No. 12274, and this is but a small percentage of the magnitude of testimony of the related Dockets Nos. 6741 and 8333. Docket No. 12729, the Notice of Inquiry, would require even more voluminous engineering data and testimony to answer all 13 engineering issues, and presumably this could only lead to a conclusion by the Commission as to whether it should or should not institute Rule Making to permit "6 to 6" operation, at which time the overall record would be further enlarged by further extensive testimony and many exhibits filed by the many parties in the proceeding.

Judged by the volume of the resulting testimony in Dockets 6741 and 8333 stemming from their fewer and more fundamental issues than is proposed by the Commission in the Notice of Inquiry ("6 to 6"), the magnitude of testimony which could result in Docket 12729 might well dwarf that already accumulated in the related dockets. Much of such evidence would be a repetition of what has already been said. The issues of the Notice of Inquiry which relate specifically to engineering analysis and testimony are these:

(a) Issues 1 and 2 which concern new primary services;
(b) Issues 3, 4, and 5 which concern losses of areas and populations;
(c) Issue 6 which concerns interferences to stations in other countries;
(d) Issue 7 which concerns the question of whether operation "6 to 6" with daytime facilities should be extended to full-time stations with different day and night facilities;

---

[1] For example, subscription TV, FM low-band experimental operations, and television experimental operations prior to adoption of standards for such services.

(e) Issue 8 which concerns gain or loss of service by full-time stations so operating;

(f) Issues 9, 10, 11, and 12 which concern the communities in which such "6 to 6" operation shall be authorized; and

(g) Issue 13 which raises the question of "6 to 6" operation with reduced power.

I do not believe that I can add more to what has been said for DBA than what I have already testified to in considerable detail in my original Comments on behalf of DBA (May 19, 1958) and in my Reply Comments (July 21, 1958). In said original comments (p. 1, last paragraph, continued on page 2), I said:

"* * * If the Commission is not convinced that this can be achieved by a uniform 7 P.M. sign-off hour, then a temporary compromise may satisfy the needs of required engineering tests necessary to demonstrate and accomplish the needed result over a reasonable time period."

Further (page 2 of same report), I stated:

"Because the DBA plan does not lend itself to simple engineering analysis, it may be that a nation-wide trial would afford the necessary observations and experiences to demonstrate its public interest advantages."

The then proposed temporary compromise on extended hours above-mentioned has now become an alternate proposal, i.e., the "6 to 6" Notice of Inquiry set forth in Dockets 12729. "6 to 6" represents 2 hours less operation daily of extended hours operation than the originally proposed "5 to 7" DBA plan.

In addition, the manner of application of use of the "2nd Hour" Curves by the Commission appears to apply the full "2nd Hour" SW values 30 minutes later in the morning, and 30 minutes earlier in the evening than is the practical case, or a total addition of one hour per day, between the manner used on behalf of DBA and that used by the Commission. The Commission justifies its use of the curves in this manner in Footnote 5, page 5, of its Memorandum Opinion and Order by the following statement:

"The matter involved is instead one of consistency of data serving to avoid confusion."

In Item 8, page 5, of the same Document the Commission refers to Docket 8333, and to a similar question raised as to the "analytical treatment afforded the data upon which the Commission skywave curves are based * * *"

I agree with the Commission's method of analyzing the data obtained between one-half hour before and one-half hour later than the instant of sunset and "that the instantaneous field at the moment of sunset is fairly given by the field intensity which is exceeded during one-half of the time of this hour interval."

The question is not related to the theoretical manner in which either the diurnal curves or the 2nd Hour curves were statistically analyzed. The basic question is when, after sunset or before sunrise, do the 2nd Hour curves apply. There is a difference—one refers to the method of statistical analyzation of data, and the other refers to the correct time of use of curves derived from this statistical data. The Commission in making its decision in Docket No. 12274 adopted September 19, 1958, on page 15, line 3 thereof, states:

"As used in the Commission's Standards and pronouncements, the term 'second hour after sunset' means the entire 60 minute period extending from 60 minutes after sunset until 120 minutes after sunset."

Committee III dealing with propagation problems, organized by the Commission to report to it in Docket No. 6741 gave considerable study to skywave propagation, including the skywave curves known as Figure 1, and developed the present Figure 2 curves which have now been adopted by the Commission, and which are more commonly known as the 2nd Hour Curves.

In connection with Committee III's work on this subject, the Committee had this to say in its evidence submitted as Exhibit 23, in Docket 6741 (Page 3 of Part 2 thereof):

"The older time reference has been adopted for this report and the notation *SS+2* will be used to refer to the *second hour* after sunset, where the sunset *hour* is the hour *centered* on the later of the sunset times at the two ends of the path." [Italic supplied.]

This refers to the method of statistical analysis and I have no disagreement with it, nor presumably does the Commission.

However, this confirms that the term "Second Hour After Sunset" when related to the *use* of Figures 1 and 2 can only mean that period beginning *90* minutes after sunset and ending *150* minutes after sunset. Likewise, the period

SR–2 begins 150 minutes before sunrise and ends 90 minutes before sunrise if reciprocity of SW propagation before sunrise and after sunset is conceded, and I know of no contention by any party to the contrary.

The Commission's consideration that the "second hour after sunset means the entire 60 minute period extending from 60 minutes after sunset until 120 minutes after sunset" is at variance with the facts from which the "2nd Hour" curves were derived and the time applicability of the *use* of such curves.

Corollary to and resulting from the above, the "2nd Hour" Curves become applicable for use at the mid-point of the analyzed period, i.e., the midpoint between 90 minutes after sunset and 150 minutes after sunset, or specifically at 120 minutes (2 hours) past sunset. The Commission's analysis would have this become applicable at the mid-point between 60 minutes after sunset and 120 minutes after sunset, or specifically at 90 minutes (1½ hours) after sunset, or if the statement in the Commission's Report and Order of its interpretation of its "Standards and Pronouncements" (Page 15, line 3, of said Order) is literally applied without regard to the technical facts the use of the "2nd Hour" Curves would begin at 60 minutes (1 hour) past sunset.

The considerations by the Commission and its decision thereon of the earlier Docket 12274 ("5 to 7" proposal) presumably gave important weight to the above matter, which appears to be an inconsistency, and to which I again refer at this time.

This referral to a technical matter raised in the previous "5 to 7" DBA proposal is again mentioned at this time because of its even greater importance in the consideration by the Commission of the instant "6 to 6" inquiry, for the reason that the decrease in the amount of time during the "6 to 6" extended hours represents not only a reduction of two hours per day less operating time to be considered by the Commission but, in addition, as much as one hour per day gained (when the full-time elements are applicable) in the delay of the applicability and appropriate time of use of the 2d Hour Curves, from the manner in which they were presumably considered by the Commission in its decision in Docket 12.217.[1]

There is the factor, too, that not only are there these three-hour differences between the "5 to 7" and "6 to 6" proposals, but that also because of the later 6 A.M. sign-on and earlier 6 P.M. sign-off, a substantially fewer number days of the year are affected, not only that a lesser number of days occur in which average sunrise and sunset times fall later than 6 A.M. or earlier than 6 P.M., but in the lesser hours per day of twilight time that occur during such days when compared to the original "5 to 7" proposal.

Then, too, this is a seasonal effect with only the winter months a matter of consequence in this proceeding. The majority of the months of the year have no part of this investigation, and any interferences that may be considered herein must be properly related in terms of the small percentage of time that such does occur to the total time of the year.

It is my belief that only a trial "6 to 6" operating plan will give the Commission the real basic information that the Commission wants, needs, and has been seeking for the past 12 years or so.

If the voluminous data and testimony previously filed in objection to the DBA plan and for that matter in Docket 6741 and 8333 is to be literally accepted then it would appear to follow that the widespread, popular and long approved earlier than sunrise operation under 3.87 has been and is now technically unfeasable, intolerable, and unworkable.[2]

Yet such operation unquestionably has been considered by the Commission to be satisfactory, and the records will show that an infinitesimal number of complaints have been registered against it over a period of more than 14 years since it has been effective, and that most stations permitted to so operate are doing so as a matter of individual preference since 3.87 as now written is permissive, not mandatory.

---

[1] Most of the population and area data relied upon in appendices I, II, and III of the Commission's report and order relate to full nighttime propagation conditions (based upon 2d hour conditions).

66 percent of the individual analyses listed in appendix I apply only to full nighttime SW conditions.

83 percent of the individual analyses listed in appendix II provide population and area data based solely on full nighttime SW conditions.

97 percent of the individual analyses listed in appendix III provide population and area data based solely on full nighttime conditions.

[2] Although 3.87 concerns only earlier-than-sunrise operation, all parties concede that after-sunset operation is reciprocally similar.

Likewise, most of the regional stations who have objected to the original DBA "5 to 7" Plan have themselves chosen and prefer to operate with their daytime facilities during earlier-than-sunrise operation under the privileges extended to them by 3.87. The "6 to 6" plan, even on a trial basis should be more acceptable to them, for it is more like what they already prefer to do under 3.87, otherwise their position is contradictory and anomalous.

Although it can be said in considering "5 to 7" operation that 3.87 is not directly applicable to a comparison of post-sunset twilight broadcasting because the number of stations beginning operations as early as 4:00 or 5:00 A.M. is but a small percentage of the total, this does not hold as a similar comparison in consideration of the "6 to 6" proposal since most stations permitted to do so by the rule begin their daily operation at 6:00 A.M. or shortly thereafter.

To compound and expand the record with more data based upon a number of technical philosophies of the effects of such operations and to again supply to the Commission much duplicate data similar to that which is on hand will only add further complexity, permit less dissection of the record into its more logical and individual components, confuse the whole with parts and the parts with the whole.

I believe that an experimental nationwide trial of the "6 to 6" proposal for the applicable and seasonal months of the 1959–60 winter will provide the Commission with more practical information that it seeks, and will permit evaluation thereof much more quickly than can be obtained from further addition to the already vast and complex scope of theoretical data which could be supplied, over that already filed with the Commission. Then, too, the Public reaction can be guaged directly. This attacks the problem direct, cuts short the time required for decision, and permits conclusive decision.

AFFIDAVIT

DISTRICT OF COLUMBIA, *City of Washington, ss:*

I, Everett L. Dillard, Registered Professional Engineer No. 605 in the District of Columbia, whose engineering qualifications are known to and have been accepted by the Federal Communications Commission in many matters relating to AM, FM, and TV allocation and engineering problems, did prepare this Engineering Statement on behalf of the Daytime Broadcasting Association in connection with the Commission's "Notice of Inquiry" Docket No. 12729 and do state that the facts contained herein are true and correct to the best of my knowledge and belief.

———— ————, *Affiant.*

Subscribed and sworn to before me this 8th day of May, 1959.

[SEAL] ———— ————, *Notary Public.*

STATEMENT BY BOB THOMAS, MANAGER, WJAG, NORFOLK, NEBR.

We submit this statement for the record in connection with recent hearings of the House Subcommittee on Communications on H.R. 6676, H.R. 6868, H.R. 8286, H.R. 9627, H.R. 10275—all relating to the effort to secure 6 a.m. to 6 p.m. year-round operation of so-called daytime standard AM radio stations.

I manage the pioneer radio outlet, WJAG, Norfolk, Nebr., broadcasting on 780 kilocycles with 1,000 watts power. This station has been operated by one owner since its inception in 1922. The station delivers a primary signal to northeast Nebraska, and corners of South Dakota and western Iowa. We protect 50,000 watt WBBM, Chicago, Ill., on this clear channel frequency—a station located over 500 miles, and two States, distant from Norfolk, Nebr.

WJAG was initiated primarily as a public interest media. We began selling time in early 1927. We frequently preempt or shift commercial schedules in order to serve the public during various kinds of area emergencies. These efforts have earned us national awards (Freedom Foundation, etc.) and listener accolades, which fill several file drawers. So, we feel qualified to discuss "serving in the public interest."

We refer to public interest broadcasting, because we feel this is precisely the intent of the respective bills you are considering—an effort to better serve the listening public—to supply effective service where there currently is no service.

The days of DX and long-distance headphone listening have passed. These changes in radio listening habits have been ignored by the archaic FCC standards for the allocation of radio frequencies as they pertain to daytime stations.

In the age of electronic miracles, the "daytime problem" plods the dusty, rutted road of "old Dobbin" and the "model T."

Within recent years, virtually every civic leader in this area has inquired—"Why does WJAG continue to 'run down at sundown': Why is your problem beyond solution?" The FCC addresses its imaginative attention each year to dozens of timely issues in the broadcasting field: Yet, a problem affecting nearly one-third of the Nation's AM broadcasters, and millions of radio listeners, receives a seemingly indifferent, or negative, shrug from those charged with radio's spectrum regulation. Skywave interference analysis in 1960, receives the restrictive reflection of 1927 measurement. There is no obvious consideration from the FCC of the possible program service improvement which would result from 6 a.m. to 6 p.m. year-round operation.

Radio, today, is essentially a service media * * * virtually every community of size supports a radio outlet * * * technological improvements in the art of broadcasting have kept pace. Restrictive FCC standards re daytime broadcasting have not kept pace.

Listeners depend upon nearby community radio outlets for: Weather, markets, storm warnings, civil defense messages, emergency service during floods and hurricanes, tornado warnings and their aftermath, cancellations of vital normal daily services, disruptions of utility services, and a myriad other essential information. Far-distant power stations cannot preempt their time to serve every community located within the broad expanse of their coverage areas. Truly, they have never been disposed, or equipped, to do so, in fact.

WJAG protects the 50,000-watt clear channel signal of WBBM, Chicago. During a severe flood emergency this spring involving the near-simultaneous and repeated cresting of two tributaries which converge near Norfolk, Nebr. We were requested by civil defense, weather bureau, and city officials to remain on the air past our normal broadcast hours. WJAG remained on the air throughout two nights and part of another, to maintain necessary continuous contact with thousands of listeners, whose property, if not their lives, was threatened by the repeated formations of ice jams along a 75-mile stretch of both rivers. Ice jams form quickly, causing a rise (or fall) of several feet in water level within a period of 30 to 45 minutes' time * * * diverting water out of normal channels in rampant destructive fashion. At times, our entire business district was threatened with inundation, had there been a rise in water level of only 2 or 3 inches.

No other facility was available to furnish this service. Proper FCC officials were notified prior to, and following, these periods of emergency operation, which, incidentally, conforms with FCC rules promulgated many years ago. During a period of frantic emergency broadcasting, it was necessary for a representative of the station to secure written letters from various busy officials, requesting our emergency service—in order to properly conform with FCC rules pertaining to daytime broadcasting past our normal hours. Telegrams had to be filed in both FCC, Washington, and the regional Kansas City FCC office.

During a part of this emergency, two WJAG staff members in Chicago attending our national association meeting, monitored the Chicago station we normally protect. The staff members also personally checked the news copy (on three separate occasions) being filed at the Chicago buread headquarters of a national news wire service, as it pertained to the statewide emergency in Nebraska. The Chicago radio outlet carried only brief references to the emergency threatening Nebraska, none that would have been considered "pertinent," or tangibly valuable to northeast Nebraskans. The news from the Chicago news bureau included only general descriptions of what had occurred many hours previous to the filing of the copy.

This is not intended to be critical of the Chicago station, or the wire service organization. Neither facility was equipped to offer timely, specific service to the listeners of our area. No nearby full-time station in Omaha or Sioux City was equipped to serve our listeners effectively during this emergency. Proper coordination with civil defense, Red Cross, city, and county officials could be effectively maintained only by a facility located in the area—by a staff personally experienced with the area locale, and the people actively working to avert disaster. Hundreds of cards and letters (copies available) repose in our files from listeners located from as far distant as 125 miles, who personally benefited

from this particular nighttime emergency broadcasting service. Similar specific emergencies, both major and minor, occur frequently throughout the country, some during hours of normal broadcast operation, some outside normal operating hours, instances where stations serve to save property and even lives.

How does this concern the problem under consideration? Nearly everyone in our industry recognizes that the 1,000 daytime radio outlets serve a vital public need. In scores of areas, these stations are the only community outlets, and the programing service from far-distant stations does not supplant their essential service, which is civic, social, political, economic, educational, cultural, agricultural, informational, and entertaining.

Yet, during certain winter months each year, which includes the most severe weather conditions, the FCC standards, promulgated largely over 30 years ago, based on engineering knowledge of that era, places an all-sweeping restriction on the programing service of hundreds of community daytime radio outlets. As a consequence, a handful of distant high-powered stations enjoy the exclusive, or near-exclusive, use of their channels during the hours after sundown and prior to sunrise. Apparently this exclusivity is based on the presumption that the high-powered stations are both willing, and able, to effectively serve the additional skywave signal area given to them by Mother Nature. This presumption is a myth.

If these high-powered stations were, in fact, capable of supplanting the program service of the daytime stations, we would refrain from entering this statement. They have not—they are not—they cannot.

A recent rural survey, made by this station in several northeast Nebraska counties, revealed one listener who depended upon the broadcast service rendered by the Chicago station we protect. Even cursory examination of the program schedules of these far-distant stations, by laymen completely unassociated with professional broadcasting, would quickly reveal the total inability of these high-powered stations to serve the additional area that comes to them as a result of nighttime skywav signals. They simply cannot be all things to all people in all areas of their huge skywave coverage patterns. Broadcasting is essentially a service; not solely an electronic engineering achievement. The service could not be dispensed without the signal, but the signal would be completely meaningless without the program service.

Our statement concentrates on increased program service, which could be made available to millions of listeners served regularly by daytime outlets, if 6 a.m. to 6 p.m. operation were allowed year around. Farmers and stockmen would be better served with dependable area weather, markets, and information peculiar to their own agriculture. Parents and schoolchildren would receive timely area information relative to school transportation and attendance. Businessmen could more efficiently and profitably plan their working days with knowledge which is now unavailable to them during the early morning wintertime broadcast hours.

It is insufficient for those opposed to this relaxation of rules to state merely that "daytime stations have the type of facility they originally applied for." The modern interstate commerce of this Nation has been continuously regulated throughout the years by Government agencies that were sensitive to recognize technological, environmental, and economic progress. The changes that have taken place in our broadcasting industry have been repeatedly recognized by members of the Federal Communications Commission who, again, only recently stated that they "must consider community needs as to programing." On the one hand, they acknowledge that "programing in the public interest" is a fundamental responsibility of the licensee. Yet, with regard to the repeated appeals of the daytime broadcasters of this Nation, representing nearly one-third of all broadcasters, they almost stubbornly refuse to properly consider the essentiality of area community programing service.

Can there be anything more ludicrous to the average listener than the explanation that a daytime radio station in one section of our large country must discontinue its admitted service at sundown in order to protect the signal clarity of another high-powered radio outlet located 500 miles away—or even 1,000 miles away—an outlet that is incapable of rendering service to the area in question? Technical problems cannot be ignored, but we genuinely believe a standard broadcast day for daytime stations could be effected and implemented by an FCC that attacked the problem with an open mind.

The FCC is an arm of Congress. Congress has clearly shown a disposition to change FCC functions when the public interest required. We submit that

passage of this legislation would not deprive a single listener of an essential program; rather, passage of the legislation would furnish increased program service of incalculable value to thousands, perhaps millions, of listeners who are now deprived of this service by Government edict.

We respectfully urge your favorable consideration of this legislation to promote better radio program service.

HOUSE OF REPRESENTATIVES,
Washington, D.C., June 9, 1960.

Hon. OREN HARRIS,
Chairman, Interstate and Foreign Commerce Committee,
House of Representatives, Washington, D.C.

DEAR MR. CHAIRMAN: It is my understanding that the Subcommittee on Communications and Power is holding hearings on H.R. 6676, 6868, 8286, 9627, and 10275, identical bills relating to hours of operation of daytime radio broadcasters.

I would appreciate it very much if you could include the enclosed statement submitted by station WLAM, Lewiston, Maine, in the record of the hearings.

As you will see from the position stated in this testimony, station WLAM is opposed to this legislation on grounds that to except daytime-only stations from the requirement for directional antennas would cause serious interference.

WLAM is located in my city, where I have had a number of discussions with officials of the station on this matter and I sincerely hope that their views will be given serious consideration by your committee.

Thank you for your kind assistance in this matter.

Sincerely,

FRANK M. COFFIN, *Member of Congress.*

STATEMENT ON BEHALF OF STANDARD BROADCAST STATION WLAM, LEWISTON, MAINE

Station WLAM has been operated continuously for 13 years in the Lewiston-Auburn, Maine, metropolitan community. It is a regional station operating with 5-kilowatt power and, as such, under the Commission's rules is designed to render service primarily to a metropolitan district and the rural area contiguous thereto. For the protection from objectional interference of other stations on its operating frequency of 1470 kilocycles, WLAM is required to operate day and night with a two-tower directional antenna. WLAM is one of the only two standard broadcast stations located in Androscoggin County, in which Lewiston and Auburn are located.

In December 1957, the FCC instituted rulemaking proceedings upon petition of the Daytime Broadcasters Association looking toward changes in rules that would authorize daytime-only stations to operate between designated hours without regard to daylight hours. WLAM undertook the expense of employing a consulting radio engineer to prepare a study which was filed with the Commission, showing the effects of the proposed new daytime-only operation. This study showed that WLAM presently provides interference-free primary service during nighttime hours to 71,200 persons in an area of 177 square miles, virtually all of which is within the boundaries of Androscoggin County. If daytime-only stations licensed to operate on 1470 kilocycles with WLAM were permitted to operate during nighttime hours without directional antennas for the protection of WLAM and other full-time stations, WLAM's nighttime service area would be drastically reduced to cover only 40 square miles with only 51,600 persons. This would effectively wipe out existing WLAM nighttime service to large areas in the home county beyond the immediate limits of the Lewiston-Auburn urban areas.

This serious loss in WLAM service, according to the special engineering study, would not be balanced by any compensating or significant continuation of service by affected daytime-only stations during the extended hours. Thus, it was shown that daytime-only station WMMW, Meriden, Conn., during the extended nighttime hours, would be even more severely limited by interference than WLAM.

The Commission, in its report and orders terminating rulemaking and denying the several DBA plans for extended hour service, found similar serious interference conditions involving other fulltime regional stations and daytime-only stations on the same frequency which would be seeking to extend service into

nighttime hours without undertaking the expense of technical modifications in installation that would avoid or minimize these ruinous interference effects. As the Commission found, what little benefits in extended service would accrue from the proposal would accrue in major part only to the urban community to which the daytime-only station itself is assigned. This limited benefit would be at the expense of loss and disruption of existing regular standard broadcast service from full-time stations to the rural areas and outlying communities, which are in greatest need of locally originated reliable primary nighttime service.

Two out of every three licensed daytime-only stations operate on regional channels, such as WLAM uses. With very few exceptions, all full-time regional stations have had to install directional antennas for operation during nighttime hours to protect existing services and to avoid, insofar as possible, losses due to interference. These bills would exempt daytime-only stations from this requirement for the period of proposed extended operation. This is not only unfair and inequitable to the full-time regional stations, such as WLAM, but more importantly, it fails to serve the overall best interests of radio listeners throughout the country who depend upon regional stations for their most reliable service. Moreover, the proposal is renewed in disregard of the adverse findings and conclusions by the Federal Communications Commission, reached by that expert agency after review of extensive data received in accordance with procedures established by Congress.

The committee should not favorably report these bills.

HOUSE OF REPRESENTATIVES,
Washington, D.C., June 15, 1960.

Hon. OREN HARRIS,
Chairman, Interstate and Foreign Commerce Committee, House of Representatives, Washington, D.C.

DEAR OREN: It is my understanding that your committee is investigating the daytime broadcasters effort to break down the hours of broadcasting, and I have received a number of letters inquiring as to the progress of this investigation.

One station in my district states that their signal would be degraded in 63 percent of the land area they now cover, and are certain that it would not be replaced by anything more than a news-and-music operation that the average daytime broadcaster is supplying.

It would be very much appreciated if you would advise me concerning this matter, in order that I may inform my constituents.

With kindest personal regards, I am,

Sincerely,

WILLIAM C. CRAMER,
Member of Congress.

U.S. SENATE,
COMMITTEE ON AGRICULTURE AND FORESTRY,
June 6, 1960.

Hon. OREN HARRIS,
Chairman, Subcommittee on Communications and Power, Interstate and Foreign Commerce Committee, U.S. House of Representatives, Washington, D.C.

DEAR CONGRESSMAN HARRIS: I understand that on June 13–15 you will conduct hearings on five measures which are designed to allow daytime radio stations to extend their hours of broadcast beyond local sunset and before local sunrise.

Mr. Stuart T. Martin, president of WCAX–TV, Burlington, Vt., has telegraphed me in opposition. He declares:

"It has been irrefutably established that the laws of nature are such that the proposed operation will create intolerable interference countrywide and its effect will be a particular hardship on rural listeners."

I request that you make this objection a part of your official record.

Best regards.

Sincerely yours,

GEORGE D. AIKEN.

NATIONAL COUNCIL OF FARMER COOPERATIVES,
Washington, D.C., June 15, 1960.

Hon. OREN HARRIS,
Chairman, Committee on Interstate and Foreign Commerce,
House of Representatives, Washington, D.C.

DEAR MR. HARRIS: The National Council of Farmer Cooperatives is taking this means of expressing its views on the five bills relating to increased hours of broadcasting by the daytime radio stations which the Subcommittee on Communications and Power now is considering.

As you recall, the National Council is a nationwide organization of farmers' marketing and purchasing cooperatives which serve a farm membership of approximately 2,750,000. Organizations affiliated with the National Council have farmer members in virtually every State of the Union and Puerto Rico, and it is for this reason that the National Council and its members have a very direct interest in the quality of radio service available to rural and smalltown areas. The National Council's genuine interest in the radio service made available to farmers is evidenced by the fact that we have had a firm policy on radio broadcasting since 1950. At that time, delegates to our annual meeting unanimously expressed their opposition "to any legislation which would impair or prevent the improvement of rural radio service, which, at best is quite inadequate."

Since that time, delegates to our annual meetings have reviewed our policy on radio broadcasting each year and have altered or revised it from time to time in line with changing conditions and new developments. In no event, however, have we ever altered our position strongly supporting radio service of the highest quality for rural and smalltown areas. Our position has been and is that the remaining clear channel stations and the regional stations provide an important means of reaching farmers and smalltown residents, particularly those who live in the more remote areas of the country. At our most recent annual meeting, held at Atlanta, Ga., in January, our delegates again reviewed our policy on radio broadcasting, and unanimoulsy adopted a statement of policy, which declares, in part:

"The National Council of Farmer Cooperatives reiterates its position that clear-channel radio stations and adequate power for them are an important means of serving rural areas and small towns throughout America. * * * The National Council also is cognizant of the support and service of local and regional radio stations in farm areas throughout the Nation. The council highly commends these stations for support of the farming industries of the Nation, and solicits their continued activity in the broad field of agriculture."

The deleted portion dealt with our support of the North American Regional Broadcasting Agreement and the Mexican Agreement, which have been ratified by the Senate and signed by the President. These agreements, incidentally, prevent any increase on broadcast hours by those daytime stations which operate on foreign channels covered by the agreements—approximately a third of all U.S. daytime stations.

The measures now under consideration by your subcommittee—H.R. 6676, 6868, 8286, 9627 and 10275—would permit the so-called daytime stations to extend their broadcasting hours before sunrise and after sunset at certain times of the year. It is apparent that such an increase in broadcast time would create severe interference with service offered by the clear channel and regional stations, during the late fall, winter and early spring months when the days are shorter. The daytime stations doubtless performs a valuable service to listeners in those areas within their broadcast range. The fact remains, however, that the number of radio stations in this country has increased from less than 1,000 to almost 3,500 in relatively recent years without materially reducing the so-called "white areas" in which listeners are primarly dependent for radio service upon signals from clear channel or regional stations. Yet, more than 1,500 of the total stations are daytimers—those licensed to broadcast from sunrise to sunset. That additional interference occurs from multiple use of channels, particularly after sundown and before sunrise, is widely recognized.

In fact, it obviously was recognized by the Federal Communications Commission when it initially licensed the so-called daytime stations to operate only between the hours of sunrise and sunset at the point of broadcast.

Radio service with a minimum of interference during the additional broadcast hours which would be provided to the daytime stations during the early morning and late afternoon by the proposed legislation is vitally important to

efficient operation of many American farms, particularly those in the more remote areas. It is at these times, particularly in the morning periods, that farmers rely principally upon radio for current information concerning weather and market conditions. In many instances, decisions as to marketing of livestock and other commodities are made on the basis of data obtained by radio.

In view of the national policy already established by the Federal Communications Commission with respect to hours of broadcasting by daytime stations and in view of the dependence of many farmers upon radio as a primary source of information, we respectfully urge that the subcommittee give due consideration to the effect the legislation before you would have upon service available to rural America. We recommend also that the subcommittee take no action which would tend to reduce the quality of radio signals presently available.

It is requested that this communication be made a part of the record of the hearing before the subcommittee.

Sincerely yours,

HOMER L. BRINKLEY,
Executive Vice President.

WBLG,
Lexington, Ky., June 6, 1960.

Hon. OREN HARRIS,
House of Representatives,
Washington, D.C.

DEAR SIR: It is my understanding that hearings will be held in the near future on an amendment to the Communications Act which would authorize daytime stations to operate from 6 a.m. to 6 p.m. I wish to register a strong protest against this legislation.

For the past 2 years we have been experiencing interference from new daytime stations during the hours prior to sunrise. These stations are now authorized to sign on at 4 a.m. under a blanket ruling of the FCC. This brings about numerous complaints from our listeners, particularly during the winter when sunrise is late.

At the recent convention of the National Association of Broadcasters, I found that practically every broadcaster is experiencing problems from interference in one form or another. It would appear that the engineering standards for the separation of stations are not sufficient to protect the public from this annoyance.

Any further liberalization of the existing rules would certainly add to the problem and would not be in the public interest.

Sincerely yours,

ROY B. WHITE, Jr.

KVNU,
Logan, Utah, June 6, 1960.

Hon. HENRY A. DIXON,
U.S. Congress,
Washington, D.C.

MY DEAR CONGRESSMAN: I have just been advised that the House Interstate and Foreign Commerce Committee will hold hearings on bills which if passed would permit daytime radio stations to operate the year round from 6 a.m. to 6 p.m. These hearings have been set up, I am told, by Congressman Oren Harris, chairman, for June 13, 14, and 15, 1960.

I realize that with 1,600 daytime radio stations in the country a lot of pressure will come to pass such legislation. I am told 60 percent of these are assigned to regional frequencies such as we at KVNU have and my 22 years in the radio business has seen changes in the rules and regulations of the FCC, but I am sure this is one that should not be changed, because of the interference that will result, particularly to existing regional full-time stations. I believe the Federal Communications Commission has thoroughly gone over this matter and decided against such changes. Those of us who have been in business and made investments on the basis of some certainty in the engineering basis upon which we operate should have the opportunity to continue without the interference that will surely result if such changes are made.

I would consider it a personal favor and those associated with me would greatly appreciate it if you could assist in preventing this legislation from being passed.

Very best regards,

REED BULLEN, *General Manager.*

SEATTLE, WASH., *June 11, 1960.*

Congressman THOMAS PELLY,
House Office Building, Washington, D.C.:

Respectfully submit this writer's strong opposition to any bills directly or in principle supporting longer operating hours for daytime radio stations on the grounds such action would be a serious threat to protection area contours of many regional radio broadcasters who, when they proudly applied for and inherited the more choice frequencies, simultaneously committed themselves to the obligation of serving a wider area and the commensurate expense automatically involved therewith. Request this communication be made a part of the record of next week's hearing.

Respectfully,

LINCOLN W. MILLER,
Executive Vice President, Queen City Broadcasting Co.
WILLIAM F. TUCKER,
Station Manager, KIRO Radio Station.

MINNEAPOLIS, MINN., *June 6, 1960.*

Senator EUGENE J. MCCARTHY,
House Office Building, Washington, D.C.:

Strongly oppose introduction of bills in the House of Representatives which would amend Communications Act regarding daytime broadcast stations. Resulting in loss of coverage and service by full-time stations would not be in the public interest. Request this communication be made a part of the hearing.

BFR BROADCASTING CORP.,
N. L. BENTSON, *President.*

JOE L. SMITH, JR., INC.,
Beckley, W. Va., June 7, 1960.

Hon. OREN HARRIS,
Chairman, Interstate and Foreign Commerce Committee, House Office Building, Washington, D.C.

DEAR CHAIRMAN HARRIS: Our attention has been called on the hearings scheduled by your committee for June 13, 14, and 15 on proposed legislation to permit radio stations licensed to operate daytime-only hours to operate from 6 a.m. to 6 p.m. Obviously operation to 6 p.m. during the winter months would mean operation after local sundown. Undoubtedly well-qualified technical witnesses to be called by you will testify to the chaotic interference that will result on the frequencies between the early sunset during the winter months and 6 p.m.

As an operator of a full-time AM station on a regional channel (WJLS, 560 kilocycles), we would probably be badly interfered with by stations that now operate daytime only, if the proposed legislation is enacted without similar legislation to permit us to continue to operate with our full daytime nondirectional power during the hours between sunset and 6 p.m. Such permissive legislation for full-time regionals that must reduce power and use directional antennas nighttime appears to me to be a poor substitute for the present requirement for daytime stations to leave the air at sunset.

Obviously, the answer to the demand for extended operating hours by daytime-only stations is the utilization of the FM frequencies. As an operator of two FM stations, we can assure you that, with the new receiving equipment now available at reasonable prices, the radio public would enjoy a much superior service.

Sincerely yours,

JOE L. SMITH, JR., INC.,
(Radio Station WJLS, Beckley; Radio Station WBKW, Beckley; Radio Station WKNA, Charleston).

JOE L. SMITH, Jr.

(Whereupon, at 12:10 p.m., the committee adjourned, subject to the call of the Chair.)

×